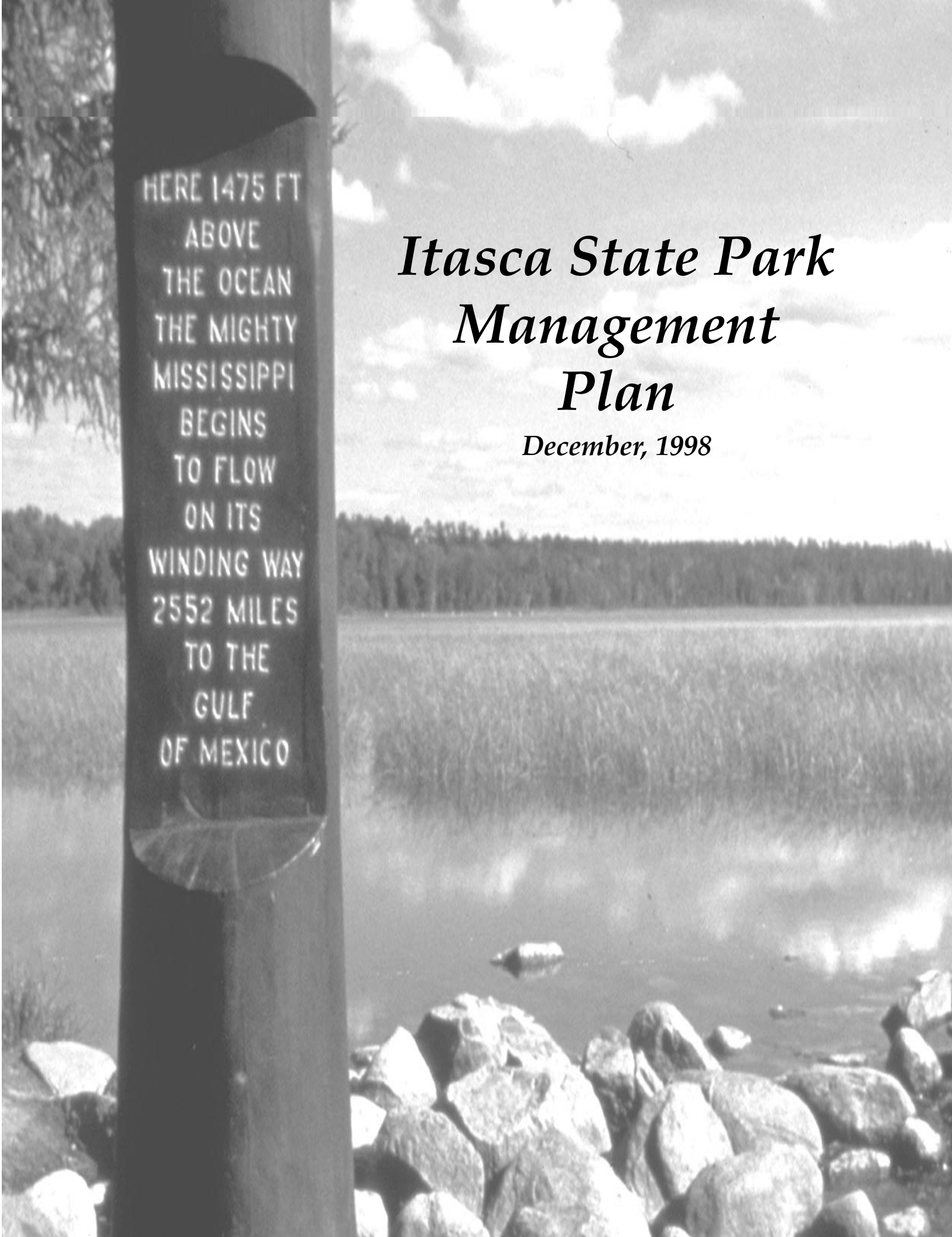

Itasca State Park Management Plan

December, 1998

Commissioner’s Approval Letter

Acknowledgments

The individual names of the many people who have contributed to development of this plan are too numerous to mention here. Over 200 people have directly participated to varying degrees in the many planning meetings held throughout the process. Many others have reviewed documents or offered written and verbal ideas that have been important to the planning process. We thank all of these individuals for their dedication and willingness to participate in the planning effort.

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Executive Summary

This management plan documents a three year long planning process for Itasca State Park that has involved over 200 citizens and resource professionals representing various groups and constituencies from around the state of Minnesota. Collectively, over 50 public planning meetings have been held to address various components of the document. These meetings began with the development of a 100 year vision statement and a mission statement for the park and continued until this document was prepared. The recommendations found in this document are the result of these collaborative efforts and represent a general direction for Itasca State Park for the next 10 - 15 years.

The two primary goals of this management plan are to:

- Present an inventory of the major natural, cultural, recreation, and interpretive resources found within Itasca State Park; and

- Establish a general long-term management direction for Itasca State Park.

To accomplish these goals, the plan has been divided into four parts. The first part consists of the Introduction and Chapters 1 - 3. These chapters (a) document the planning process used to complete this document; (b) present long - term mission and vision statements for the park, the state park system, and the Minnesota Department of Natural Resources; (c) discuss Itasca State Park's role in its ecological and socio - economic regions; and (d) describe a management zoning concept for the park. Collectively, these chapters describe the philosophical direction and the management framework upon which the planning process and the final document were based.

Part two of the plan consists of five chapters (Chapters 4 - 8) that inventory existing natural, cultural, recreation, and interpretive services resources and programs, and document several recommendations that affect these programs and resources. Collectively, these chapters represent a summary of the park's major management responsibilities and identify the plan's principal management recommendations considered to be necessary to move toward realization of the park's philosophical direction over the next 10 - 15 years.

Part three of the plan consists of two chapters (Chapters 9 - 11) that address major building, facility, and staffing needs necessary to implement the recommendations found in preceding chapters of the plan. Finally, part four is a single chapter that describes a plan amendment process that should be used to address changes that undoubtedly will be proposed over the life of this plan.

Critical to the recommendations found in this plan is the park's 100 year vision statement presented in Chapter 1. This vision statement leans strongly toward preservation and protection of the natural, historical, cultural, and archaeological resources found within the park's boundaries while providing opportunities for park visitors to attain the experiences and benefits that they seek from recreational activities within the park. Equally important, an underlying premise of the vision statement is that the park plays a critical role in interpreting the region's resources and providing environmental education opportunities to visitors.

Two complementary management frameworks have guided this management plan and are woven throughout the document. Both frameworks are based on a more holistic view of park management than is traditionally practiced. The first framework is a departmental commitment to ecosystem-based management (EBM) that challenges resource managers to consider whole communities rather than single species as they select management actions. Ecosystem-based management recognizes that all species are part of a larger whole, that there is interconnectivity between species, and that managers need to focus their attention on whole systems. This framework addresses the Division of Parks and Recreation's responsibility and commitment to preservation and protection of the resources found within each Minnesota State Park.

The second framework guiding this plan is known as benefits-based management (BBM). This framework challenges managers to focus their actions on the experiences and benefits that visitors, communities, economies and environmental systems attain from the preservation of natural environments and the provision of outdoor recreation opportunities within those environments. Benefits - based management recognizes that visitors come to recreation areas seeking particular experiences and benefits, that managers of public recreation areas have a responsibility to provide opportunities for attainment of those experiences and benefits, and that the most effective management regimes are those that consider the desired outcomes (experiences and benefits) associated with specific management actions. This framework addresses the Division of Parks and Recreation's responsibility and commitment to provide appropriate outdoor recreation and education opportunities within each Minnesota State Park. Benefits - based management is an effective approach to understanding and managing the human dimension of ecosystem - based management.

Implementation of these two frameworks requires an understanding of the resources found within the park, establishment of a desired set of management outcomes, development of specific management recommendations for realization of the desired outcomes, and ongoing research and monitoring. Accordingly, the management zoning concepts for Itasca State Park articulated in Chapter 3 are a critical foundation for operationalizing these two frameworks for the park. Similarly, each of the chapters contain a set of management goals, a set of target benefits (desired outcomes), an inventory of existing resources based on the best knowledge available today, and recommendations for future management actions. Each chapter also includes a section that discusses the major research and monitoring needs associated with the management efforts addressed in the chapter. It is only through ongoing research and monitoring that we can understand how the park's resources and human needs change over time and assess the effectiveness of particular management actions.

Some of the plan's major recommendations include:

- Focus natural resource management activities on ecosystem management rather than single species management;

- Adopt a set of forest management guidelines aimed at restoring, regenerating, and protecting pine forest ecosystems within the park;
- Maintain healthy and diverse aquatic systems;
- Continue to expand natural and social science research efforts that aid in identifying appropriate management actions;
- Continue to explore ways to involve a variety of people and agencies in natural resource management activities within Itasca State Park;
- Continue to identify, document and preserve Itasca State Park's cultural, archaeological and historical resources (including the park's cultural landscapes);
- Continue to provide visitors with a range of appropriate recreational opportunities;
- Construct an Itasca State Park visitor center;
- Continue to enhance the park's interpretive programming opportunities;
- Develop a long-range plan to ensure the economic sustainability of the Douglas Lodge Resort;
- Continue to provide opportunities for quality experiences and benefits;
- Develop a set of building and facility management guidelines; and
- Provide increased operations funding.

Each of the plan's recommendations is supported by a list of specific actions that range from continuation of existing activities such as prescribed burning, tree planting, and trail management to new or enhanced efforts such as expansion of the interpretive and resource management programs and expansion of efforts to protect cultural landscapes. In addition, several of the recommendations entail other building and facility modifications. Among these are:

- Remove Brower Inn and consider reuse of the site for an outdoor amphitheater;
- Design an additional backpack camping loop in the Backcountry Zone (Zone 2);
- Continue efforts to rehabilitate and restore historic buildings throughout the park, but in particular in the Douglas Lodge and Bear Paw Campground Historic Areas;
- Remove Nicollet Court and replace it with a single facility or multiple facilities that will provide a comparable number of overnight accommodations;

- Redesign the Douglas Lodge/ Forest Inn parking lot with a greater pedestrian focus;
- Redesign and relocate the interpretive and gift shop facilities at the Headwaters of the Mississippi;
- Consider development of additional short-trail links in the Backcountry or Concentrated Use Zones for interpretive programming;
- Replace the park administrative offices;
- Redesign the Landmark Trail parking lot and display area; and
- Consider eventual movement toward use of mass transit options to reduce crowding, improve visitor flow, and reduce visitor impacts on the park's natural and cultural resources.

More detailed explanations of these and other buildings and facility modifications recommendations appear in the relevant chapter. The plan recognizes that some of the recommendations and actions must be phased - in over time, as staff time and budgets become available. Chapter 12 identifies the major staffing and operations needs associated with plan implementation.

This plan also recommends two minor boundary adjustments to align the park's eastern boundary more closely with the Trunk Highway 200 right-of-way. These proposed modifications are discussed in Chapter 10.

The plan's final chapter describes a process to be used to address the inevitable changes in the management plan that will be proposed over the next 10 - 15 years. Because this document is a collaborative effort between park professionals, other resource professionals and nearly 200 active citizens, the recommendations in this chapter include provisions for strong public involvement in the amendment process.

Introduction

Purpose of the Plan

This plan documents the work of a three year long planning process and sets a general direction for the management of Itasca State Park for the next 15 - 20 years. As such, it does not contain detailed management prescriptions for implementing the recommendations found in each chapter. It is understood that the plan needs to set a general direction and allow management staff, in cooperation with Minnesota's citizens, the flexibility to determine specific actions that will be appropriate to carry out the recommendations.

The Planning Process

The Itasca State Park planning project began in 1995 with a strong commitment to public involvement that continued throughout the process. Five planning committees were created to provide a mix of input from citizens and resource professionals. These committees were the: (a) Buildings, Facilities and Roads; (b) Community and Regional Involvement; (c) Interpretation and Information; (d) Recreation and Visitor Management; and (e) Resource Management Planning Committees. Committee members were self-selected according to their personal interests in the planning effort. Members were roughly evenly divided between local residents and Twin Cities metropolitan area residents. Collectively, committee members represented a wide variety of perspectives, gave unselfishly of their time throughout the process, debated policy, and formulated the recommendations contained in this plan. Over 50 public planning committee meetings were held during the process.

In addition, the pre-existing Itasca State Park Resource Management Advisory Committee was used as the Integrated Resource Management Team (IRM) for the project. This group consists primarily of resource management professionals and university professors with some private citizens. The Resource Management Committee met periodically throughout the process to review the planning project's progress, offer ideas, and consider recommendations developed by the planning committees. Many of the Resource Management Committee members also actively participated in the Planning Committee meetings.

The result of the planning and resource management committee meetings was a draft plan that was distributed for public review. Copies of the draft plan were made available to a mailing list of nearly 500 individuals who had expressed interest in receiving a copy of the draft plan during the planning process. In addition, copies were placed in the Bemidji and Park Rapids Public Libraries and distributed to resource professionals from a variety of agencies.

Public open houses were held near Itasca State Park and in the Twin Cities metropolitan area to receive comments on the draft plan during the 30 day review period. Following the public review, a revised draft was written and submitted for review by the Department of Natural Resources' staff and approval by the Commissioner of Natural Resources.

A completed park plan and "planning process file" documenting the planning process and pertinent background information was distributed to the following locations following the plan's approval: Itasca State Park Office, State Park Regional Manager's Office in the Bemidji Regional DNR Office, State Park Planning Section in the Division of Parks and Recreation's St. Paul Office, and the DNR Bureau of Engineering in St. Paul. In addition, copies of the final plan were distributed to individual citizens who indicated a desire for a personal copy.

The recommendations in this plan are the result of this partnership-based planning process. This plan provides a basic management direction for Itasca State Park and is not intended to provide specific management details.

Park Description

Itasca State Park preserves over 32,000 acres of land and surface water in northwestern Minnesota. The park is located 47° N. latitude and 95° W. longitude between Park Rapids and Bemidji, Minnesota. Itasca lies within Minnesota's Pine Moraines and Outwash Plains Ecological Subsection and within portions of Clearwater, Hubbard and Becker Counties. Itasca State Park is the oldest Minnesota State Park currently in the state park system. Established in 1891 to protect the Headwaters of the Mississippi River and portions of the large pine forests that once dominated the region, Itasca continues to preserve some of the state's most significant natural and cultural resources. The entire park is listed on the National Register of Historic Places and several sites within the park that are designated as National Historic Areas or State Historic Places. Among the myriad natural and cultural features found within the park are:

The Headwaters of the Mississippi River, is found at the outlet of Lake Itasca. The search for the Headwaters of the Mississippi began with the discovery of the river's mouth and basin in the mid - 1600s by French explorers and was not concluded until Jacob Brower's late - 1800s surveys. During this time period, several attempts were made to identify and document the source of the river. The search involved controversy as well as adventure that are chronicled through the park's many interpretive programs, displays, and exhibits.

Old-growth conifer and hardwood forests are found throughout the park. Within Itasca's old-growth pine forests are the state's largest red pine, one of the state's largest white pines and some of the largest blocks of contiguous old-growth pine on public lands in Minnesota.

The Itasca Wilderness Sanctuary is a designated National Natural Landmark and a State Scientific and Natural Area is located on the northwestern corner of Lake Itasca and preserves old-growth pines, Bohall Lake and habitat for numerous species.

Over 20 Federally or State listed endangered, threatened or species of special concern species are known to exist within Itasca State Park.

Over 100 fresh water lakes offer habitat to many aquatic species and recreational opportunities to a range of visitors.

Preacher's Grove is a popular area along Lake Itasca's east shoreline that contains some of the park's oldest red pines. Some of these are over 250 years old.

The Itasca Bison Kill Site is one of Minnesota's oldest known archaeological sites contains evidence of human activity in the area from approximately 8,000 years ago.

Woodland Indian and pioneer burial sites along Lake Itasca's east shoreline offer evidence of the area's early human activity.

Douglas Lodge an early 20th century resort complex listed on the National Register of Historic Places, offers visitors lodging, dining, and gift shop facilities on the south shore of Lake Itasca.

Works Progress Administration (WPA) and Civilian Conservation Corps (CCC) era buildings are found throughout the park representing some of the most complete WPA and CCC sites remaining in Minnesota.

In addition, Itasca State Park provides many outdoor recreational opportunities to its 500,000 annual visitors. Among those reported by visitors as most satisfying are viewing the Headwaters of the Mississippi, bicycle touring, sight-seeing, hiking, and walking (Nickerson, et al., 1997).

Management Concepts

The Minnesota Department of Natural Resources (DNR) has set a goal to manage the state's natural resources in a way that is sustainable for future generations. Ecosystem-based management (EBM) is the approach that DNR is using to achieve this goal. The EBM approach takes a broader perspective and addresses entire ecosystems, rather than focusing only on individual plant or animal species or small parts of the ecosystem. This approach shifts management emphasis to the variety of benefits that natural areas provide to the environment, economies, communities, and people. Accomplishing this requires balancing four fundamental outcomes:

- An environment that supports human, animal and plant life;
- An economy that is strong and sustainable;
- A community that provides a high quality of life; and
- Opportunities for visitors to attain their desired experiences and benefits.

Itasca State Park addresses these four outcomes somewhat now. A major goal of this planning process was to decide how to manage Itasca's resources to sustain healthy ecosystems into the future. Ecosystems include all the living organisms (plants, animals, microorganisms, people), their physical surroundings (soil, water, air), and the processes that maintain them. Ecosystems may be small (a rotting log or an isolated pond), medium-sized (a forest stand or watershed), or large (The Pine Moraines and Outwash Plains Landscape Region). When people think about ecosystems, the first things they usually consider are the natural aspects of the environment (e.g., soil, wildlife, and vegetation). However, EBM also recognizes that humans have a unique effect on the ecosystem and are affected by the health of the ecosystem. Healthy ecosystems for Itasca State Park will provide the setting for experiences people expect from the park: (a) getting away and relieving stress; (b) learning new things; (c) enjoying family activities; (d) viewing beautiful scenery; (e) relaxing while fishing, (f) seeing wildlife, hiking in a variety of natural settings; (g) viewing plant and animal habitat; and (h) learning more about natural systems. A healthy ecosystem in the park also affects neighboring communities, the surrounding landscape, Minnesota, and the nation.

This EBM perspective forces us to look at Itasca State Park not as an island but as an integral and beneficial part of a larger ecosystem. In addition, the approach calls upon us to articulate how the park specifically benefits the ecosystem. For example, changes in visitor services provided at the park may affect the economic impact visitors have on neighboring communities or changes in vegetation management within the park can affect the eagle or wolf populations that use the park as part of their habitat. Sustaining a healthy ecosystem within Itasca State Park helps maintain the ecological and social health of a much broader area.

Attempting to gain an understanding of all the potential effects Itasca has locally, regionally, and nationally is an overwhelming task. Benefits Based Management (BBM) is a framework for guiding recreation management decisions that is one way to address what human expectations can be accommodated within Itasca State Park on a sustainable basis. This framework balances those human activities that the park's resources can accommodate with visitor expectations of what benefit opportunities the park should provide. BBM also provides a framework to allow managers to understand how characteristics of the setting and activities visitors enjoy in the park help people attain desired benefits. Park management staff is working to better understand what benefits visitors desire, those they attain, and how to maximize opportunities for visitors to attain their desired benefits while preserving the park's resources. At the same time, managers are interested in understanding what long-term impacts that recreating in the park has on visitors, their communities, their environment, and their economic well-being.

Within the BBM framework, a benefit is defined as a “desirable change of state,” an improved condition or state for an individual, a group of individuals, a society, or other entities (Driver, Brown, and Peterson, 1991a). The natural environment plays a vital role in what and how benefits are produced. Different activities are conducted in different types of settings, which result in certain kinds of benefits. Many benefits attained from direct participation in activities at Itasca can lead to other lifelong benefits. For example, a long hike along one of the park's backcountry trails may help a person feel that he or she is escaping life's normal demands and reducing their stress at work. In

the longer term, that person may feel mentally relaxed when returning to work and become a more efficient employee. Another example may be related to a more developed area where there are many interpretive signs and exhibits. This interpretive opportunity helps people learn more about nature. A better informed society may result from the fact that many people learned about nature at Itasca, and those people may treat nature with better care. This change in behavior can benefit the environment and future generations who live in that environment.

The list of potential benefits to society is too large to be fully addressed here, but this plan does use information regarding the benefits people most desire and attain from participation in recreational activities at Itasca State Park. Since the setting plays a vital role in the production of all benefits associated with the park, alterations to it may have a large effect on what benefits society may realize. Therefore, any changes in the setting must be evaluated in terms of their effect on the benefits to users of Itasca State Park.

Minnesota State Parks have been partners in two pilot projects to assess the mix of benefits that park visitors desire and attain from recreation areas. Both projects are being done with the participation of the DNR, Division of Parks and Recreation; the University of Minnesota, Department of Forest Resources; USDA Forest Service, Rocky Mountain Forest and Range Experiment Station; and the US Department of Interior, Bureau of Land Management, Colorado State Office. The State Park Visitor Benefits Study surveyed park visitors in six Minnesota State Parks, including Itasca, to identify what benefits they desired and attained by visiting the state parks. A second, community benefits study, surveyed community leaders and tourism industry businesses, including those in the Itasca area, to identify how rural communities benefit from state parks. The results from the visitor benefit study have recently been published and are available from MNDNR staff as a separate document. Stein and Anderson (1998) presented results of the community benefits study. This study supports the observation that the park benefits local communities. Results from both the visitor and community studies have been incorporated into this management plan. The BBM study results will also be used by park staff to select management activities and techniques that provide opportunities for visitors and communities to benefit from Itasca State Park. The results of these studies will help decision-makers target the limited funds available for recreation and leisure services toward those services that produce the greatest overall benefit.

Chapter 1. Mission and Vision Statements

In recent years, the Minnesota Department of Natural Resources and its Division of Parks and Recreation both undertook projects to articulate statements of how they would like their organizations to function in the future. The result of these efforts were vision statements for the department and the division. In addition, both organizations articulated what they saw as their primary role in providing services to Minnesota's citizens in the form of mission statements.

Development of vision and mission statements for Itasca State Park were critical components of the planning process that resulted in this plan. It is those statements that have identified what Itasca should be in the future and guided development of the recommendations found in this plan for taking specific actions that will lead to that desired future. The DNR, Division of Parks and Recreation and Itasca State Park vision and mission statements follow.

DNR Vision Statement

"We will work with the people to manage the state's diverse natural resources for a sustainable quality of life."

Division of Parks and Recreation Mission

"We will work with people to provide a state park system which preserves and manages Minnesota's natural, scenic and cultural resources for present and future generations while providing appropriate recreational and educational opportunities."

Division of Parks and Recreation Vision

We will continue to work with the people of Minnesota to ensure that the Minnesota State Park System will be sensitive to the needs of current and future generations and guided by the following principles and values:

- A commitment to ensure deliberate and effective natural, cultural, historical, and archaeological resource management;
- A commitment to provide appropriate recreational opportunities;
- A commitment to maintain a proper balance between resource protection and recreational use of state park lands;
- A conscious recognition of our responsibility to the public for wise and prudent acquisition and development of state park lands;
- A recognition of our educational and interpretive roles;
- A conscious and continuous effort to respect the valuable human resources embodied in our employees and the public;
- A continued desire to actively seek and adopt innovative, effective, and efficient management practices;
- A commitment to manage state parks for the benefits that they provide to people, society, the environment, and the economy;
- A realization of our responsibility to secure and maintain the resources necessary to implement our mandates and mission;
- A pledge to provide high quality public service; and
- A promise to consistently seek public involvement and support in decision making.

Itasca State Park Mission Statement

Itasca State Park exists to protect the unique resources found within the park, interpret those resources, and provide appropriate outdoor recreational opportunities for the benefits accrued to people, society, the economy, and the environment from the presence of those resources and opportunities.

Itasca State Park 100 Year Vision Statement

The following vision statement was developed by the Itasca State Park Planning Committees and reflects their view of what Itasca State Park should be 100 years from now.

We will work with the people of Minnesota to ensure that management decisions and actions for Itasca State Park are guided by the following fundamental principles:

- Preservation and restoration of the ecological integrity found in Itasca State Park's forest communities, particularly the old-growth forests, and their related animal and plant communities as close as possible to their pre-European settlement condition;

- Preservation of the ecological integrity found in Itasca State Park's critical water resources and their associated animal and plant communities as close as possible to their pre-European settlement condition;

- Preservation of Itasca State Park's unique natural, historical, cultural, and archaeological resources;

- Preservation and restoration of Itasca State Park's historical structures and historical areas which represent the park's different historical eras; and

- Strengthened and expanded interpretation and environmental education programs about the natural, cultural, historical and archaeological history of Itasca State Park, the surrounding region and the State of Minnesota.

Within these parameters, management actions to provide sustainable recreational opportunities for visitors to Itasca State Park will ensure the following:

- Use of construction designs for new or replacement buildings and facilities which are consistent with Itasca State Park's natural, cultural, historical, and archaeological integrity and significance;

- Preservation of opportunities for visitors to experience wildness, quiet, and solitude;

- Provision of varied recreational opportunities which are compatible with the fundamental principles identified above; and

- Cooperation with neighboring communities, businesses, and other land management entities to meet public desires for recreational opportunities and support services in the Itasca area and to support the area's economic vitality.

From Mission/ Vision to Action: Benefits Based Management and Itasca State Park

Itasca State Park was created largely through the tireless work of Jacob V. Brower to protect some of northern Minnesota's pine trees and the Headwaters of the Mississippi River. The park's vision statement for the next 100 years has expanded Brower's vision to reflect a changing environment and society. Yet, Itasca State Park's fundamental purpose remains as Brower envisioned it a century ago - protection of a portion of the natural ecosystem that once dominated central Minnesota and protection of the Mississippi River's Headwaters. Brower believed that Itasca State Park inherently provided benefits to society and worked to ensure that future generations of species (human and nonhuman) would have opportunities to realize those benefits.

Since Brower's time, we have learned a great deal about Itasca's natural environment and how people recreate in the park. In recent years, we have begun to document the specific benefits that people attain from Itasca State Park. Many of these benefits, such as improved health and enhanced family relationships, are attained by individual visitors. Other benefits, such as improved community awareness of environmental issues, are realized by neighboring communities. Still other benefits, such as employment for local residents, are primarily economic. Many of the benefits associated with Itasca State Park are environmental. Among these are increased environmental stewardship and greater awareness of human dependency on the environment.

The park's vision and mission statements focus management actions on providing settings and recreational opportunities for benefit attainment. The vision and mission statements describe what the park should be like in 100 years. This plan focuses on presenting recommended management actions that should be taken in the next 15 - 20 years to realize the park's vision and mission. In both cases, the driving force is management of Itasca State Park for the mix of personal, social, economic and environmental benefits that are accrued from the park. To accomplish this goal, a set of target benefits (desired outcomes) were identified during the planning process. The target benefits selected for the park are based on research conducted at Itasca and elsewhere, the future conditions outlined in the vision statement, and park's mission statement. The recommendations found in this plan were developed with the target benefits, the vision statement, and the mission statement in mind.

Chapter 2. Beyond Park Boundaries

Introduction

Although Itasca State Park has statewide and national influence, it has the greatest impact on the ecological and socio-economic regions in which it is located. This chapter describes both the ecological and socioeconomic regions and some of the primary relationships between the park and the regions. The ecological region is discussed in terms of the Minnesota Ecological Classification System (ECS) and reflects that system's natural landform boundaries. This region is described in terms of its natural features and human interaction with those features. Although the socio-economic region partially overlaps the ecological region, its boundaries are defined as that area within a 50 mile radius of the park. The socio-economic region is described in terms of regional population, recreation patterns, availability of recreation facilities, and other human interactions with the region.

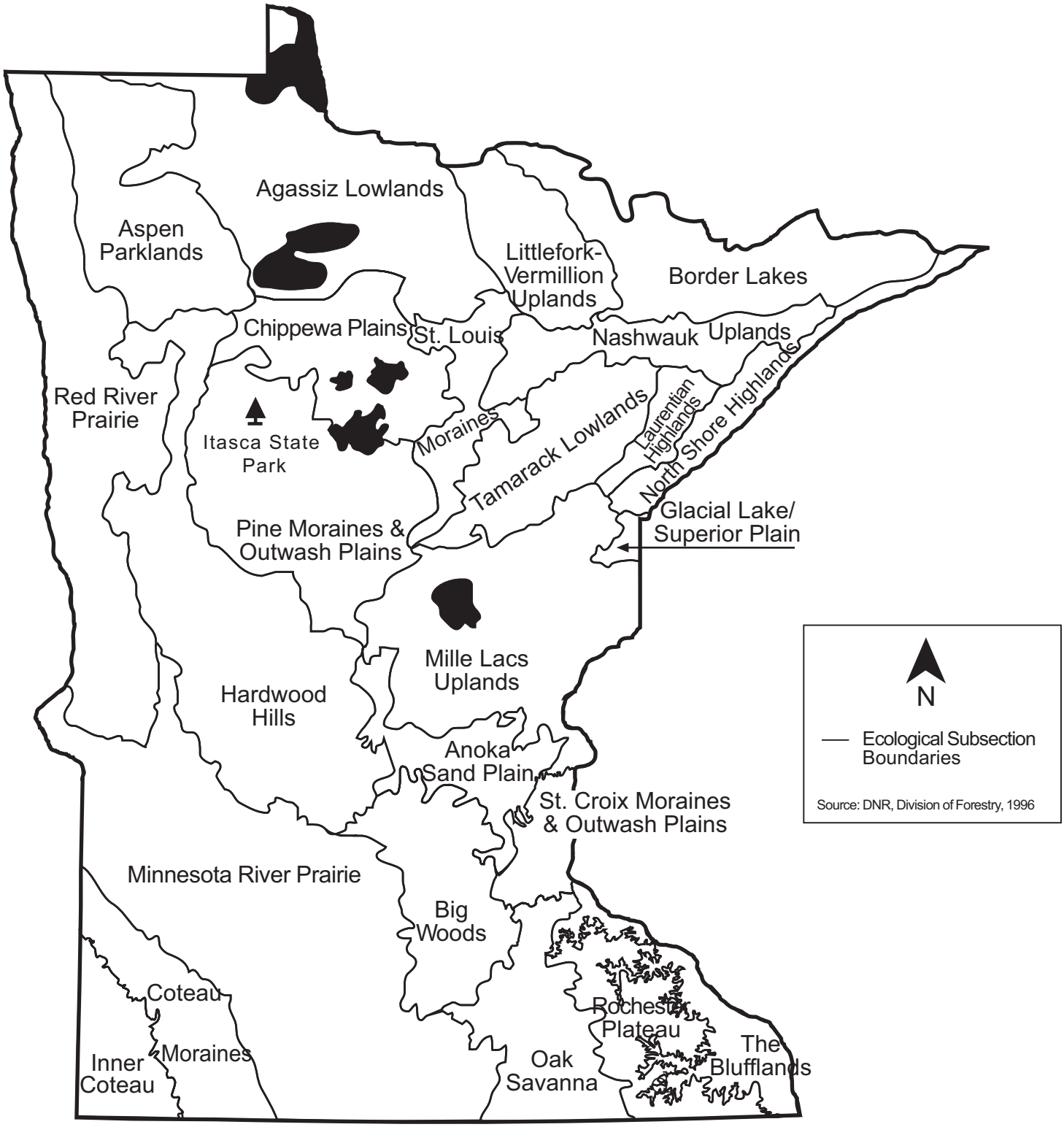
Pine Moraines and Outwash Plains Ecological Subsection

Minnesota's ECS is part of a national classification system that separates and describes units of different landscapes. This approach stresses the interrelationships and the result of interactions among components of the ecosystem. These components include climate, geology, geomorphology, parent material, soil, vegetation, hydrology, and land history. The ECS approach handles each component in relation to the others, rather than treating each one separately (Hargrave, 1992) The ECS is a management tool that helps describe the extent and content of various ecosystems, improves resource managers' ability to predict how landscapes will change over time, and allows resource managers to communicate more effectively with each other.

The ECS approach divides Minnesota into 23 distinct units called subsections (Figure 1). Itasca State Park is located in the northwestern portion of the Pine Moraines and Outwash Plains Ecological Subsection. The Pine Moraines and Outwash Plains Subsection covers approximately ten percent of Minnesota. It stretches from north of Bemidji to south of Wadena and Brainerd (MNDNR, Parks and Recreation, 1995). This subsection is composed of a mix of end moraines, large outwash plains, narrow outwash channels, till plains, and drumlin fields. Most of the subsection is covered by thick glacial drift with a Precambrian rock underlying. The till is generally sandy but there is loamy drift to the north (Hargrave, 1996).

Pre-European settlement vegetation consisted of a mix of jack pine (*Pinus banksiana)* and northern pin oak *(Quercus ellipsoidalis)* on the excessively drained areas of broad outwash plains. Aspen-birch (*Populus sp.- Betula papyrifera*) and pine forests dominated large areas of the other landforms. Red pine (*Pinus resinosa)* and white pine (*Pinus strobus)* forests were found on the rolling to

Figure 1. Ecological Classification System (ECS) Subsection Map of Minnesota with Itasca State Park



irregularly sloped end moraines. Forests composed of a diverse mix of northern hardwoods and white pine were located in fire protected areas at the northern and eastern edges of the subsection. Irregular topography, broad wetlands, and large lakes provided this fire protection (Hargrave, 1996).

Lakes are common on the end moraines and outwash plains. Kettle lakes, in particular are found on pitted outwash plains and within stagnation moraines. Some of Minnesota's largest lakes are found in the Pine Moraines and Outwash Plains Subsection. The Headwaters of the Mississippi River lie within Itasca State Park. The other large rivers in the region are the Pine and Crow Wing Rivers (Hargrave, 1996).

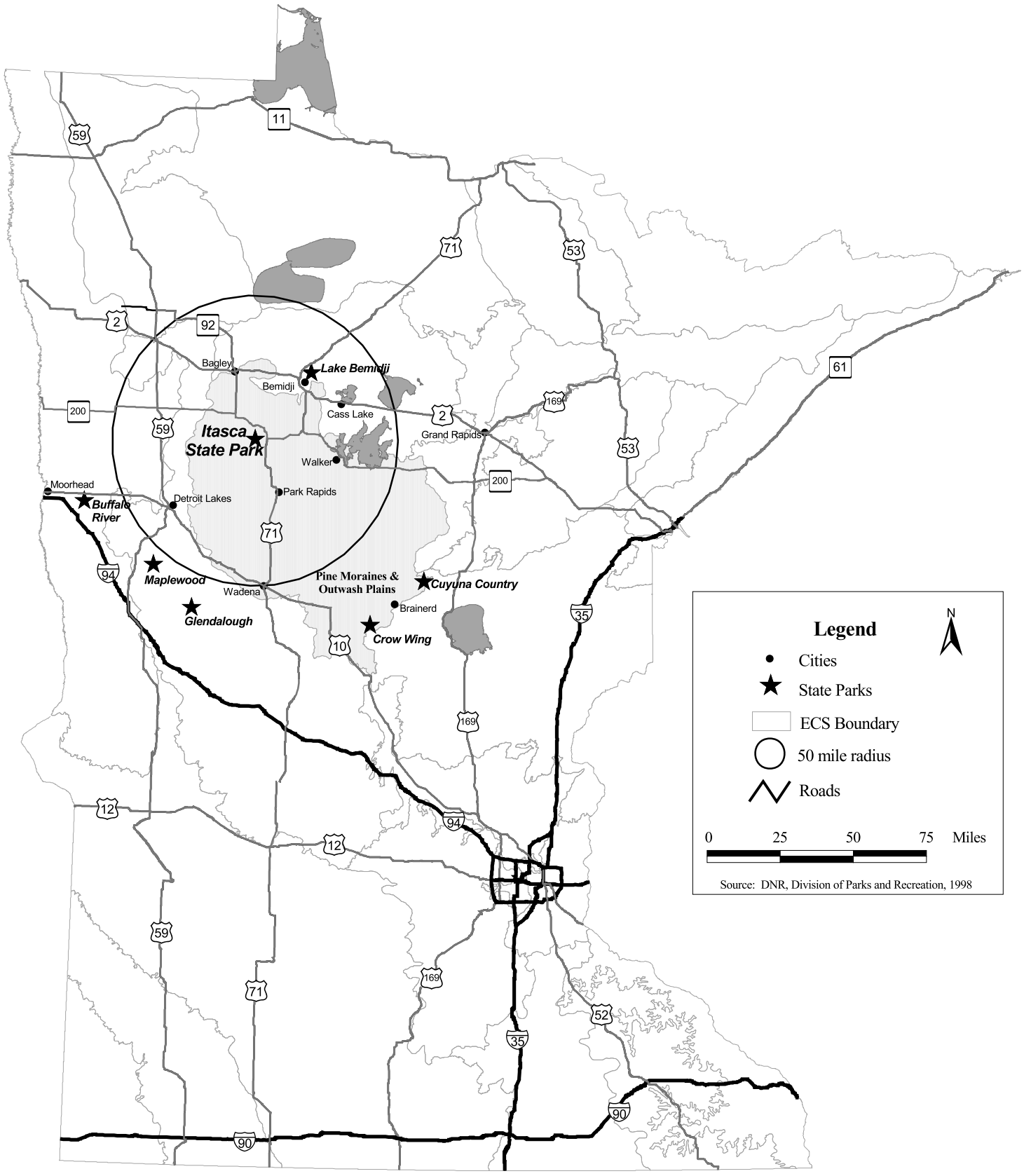
Present vegetation includes white and red pine, aspen-birch, mixed hardwoods, jack pine barren, and conifer bog. Among the rare plants in the region are ram's-head lady's-slipper (*Cypripedium arietinum*), olivaceous spike-rush *(Eleocharis olivacea),* bog adder's-mouth *(Malaxis paludosa),* slender naiad *(Najas gracillma),* and sheathed pondweed *(Potamogeton vaginatus).*

Current land uses in this region consist of tourism, forestry activities, industry, and agriculture. In addition, considerable public land exists within the region. These lands include National Forests, National Wildlife Refuges, State Forests, State Scientific and Natural Areas, State Wildlife Management Areas, State Trails, County Forests, County Parks, and City Parks. In addition, portions of the White Earth Indian Reservation and portions of the Leech Lake Indian Reservation are within the Pine Moraines and Outwash Plains Subsection.

Socio - Economic Region Description

Itasca State Park is located in portions of Clearwater, Hubbard, and Becker Counties approximately 20 miles north of Park Rapids, 30 miles south of Bemidji, and 230 miles northwest of Minneapolis - St. Paul. Among the cities within a 50 mile radius of Itasca State Park are Backus, Bagley, Bemidji, Cass Lake, Detroit Lakes, Erskine, Park Rapids, Wadena, and Walker (Figure 2). The region's economy relies heavily on travel, recreation and tourism. The Minnesota Department of Trade and Economic Development estimated that the tourism industry employed as many as 500 people in Clearwater County and between 500 - 1,000 people each in Hubbard and Becker Counties during 1993 while generating in excess of $25 million in gross wages for the three counties. Gross receipts to hotels, motels and resorts for 1993 were estimated to be near $500,000 for Clearwater County and over $1 million in Hubbard and Becker Counties. The regional economy also relies on forest - related industries, agriculture, and light industry. The 1990 census reported that median household income within the region was less than $25,000 per year (MN Rural Development Board, 1995).

Figure 2. Itasca State Park Ecological and Socio-Economic Regions



Regional Population Analysis

The region is sparsely populated with the exception of the cities listed below. In 1990, the combined population of Clearwater, Becker and Hubbard Counties was 49,369 for a density of less than 1 person per square mile (USDC, Bureau of the Census, 1990). Several small cities are within a 50 mile radius of Itasca State Park. The 1990 population for those cities within the region in excess of 2,000 people were:

Bemidji	11,165
Detroit Lakes	6,635
Wadena	4,220
Park Rapids	2,863
Perham	2,075

Other cities within the region with 1990 populations between 500 - 2,000 people were Fosston, Bagley, Frazee, Mahnomen, Menahga, Walker, New York Mills, Cass Lake, Pine River, Twin Valley, Blackduck, McIntosh, Sebeka, Lake Park, Clearbrook, and Ulen.

The Minnesota State Demographer's Office projects that the region's overall population will experience only slight changes by the year 2020. The largest projected increases are in Beltrami, Cass, and Hubbard Counties. The largest projected decreases are in Red Lake, Becker, and Norman Counties (Minnesota State Demographer, 1995).

Regional Recreation Opportunities

This region provides a range of outdoor recreational opportunities to visitors that include significant public and private landholdings. These opportunities contribute substantially to the region's economy. Federal lands within the region include Chippewa National Forest and Tamarac National Wildlife Refuge. The White Earth and Leech Lake Indian Reservations also provide recreational opportunities. Several state forests are found within this region. Among those closest to Itasca State Park are White Earth, Paul Bunyan, Badoura, Two Inlets, Smoky Hills, and Mississippi Headwaters State Forests. Other state forests within the region include Crow Wing, Pillsbury, Land O' Lakes, and Huntersville. Several Wildlife Management Areas (WMA) and Scientific and Natural Areas (SNA) also exist within the region. Among those closest to the park are Hubble Pond WMA, Greenwater Lake (SNA), and Iron Springs Bog SNA. There are over 200 resort operations, 50 hotels and motels, and 30 golf courses within the region. In addition, the region offers visitors a range of recreational opportunities for both day and overnight visitors. Among these are camping; picnicking; swimming; and a variety of hiking, horseback riding, cross-country skiing, snowmobiling, snowshoeing, ATV, mountain biking, and bicycling trails.

As part of the Statewide Comprehensive Outdoor Recreation Planning (SCORP) process, the MNDNR has maintained a data base of recreational facilities since the early 1970s. However, updates in recent years have been less than regular. While updates for many of the public facilities

have been accomplished in recent years, most of the private facility data are out of date. The data presented in this plan is a composite of information from the MNDNR data base, various printed materials, and the Minnesota Office of Tourism. Although arriving at exact figures for the number of recreational facilities in the region is difficult, at best, Table 1 displays the approximate number of public boat accesses and campsites found within a 50 mile radius of Itasca State Park. In addition, the region offers visitors over 200 resorts, 50 hotels and motels, 30 golf courses, 12 historic sites and museums, and 4 nature centers. There are also several outfitters, recreation equipment rental businesses, tour guides and launch services within the region.

Table 1. Boat Accesses and Campsites Within 50 miles of Itasca State Park

Administrator	Boat Accesses	Campsites
City	25	80
City GIA	0	0
County	82	150
DNR-Fish & Wildlife	12	0
DNR-Forestry	19	266
DNR-Parks & Recreation	5	296
DNR-Trails & Waterways	217	0
MNDOT	7	0
Township	9	0
Tribal	1	0
U.S. Corps of Engineers	2	74
U.S. Fish & Wildlife	15	0
U.S. Forest Service	37	326
Public Subtotal	431	1192
Private Subtotal	379	190
Total	**810**	**1382**

Overnight Use

Camping - There are over 45 campgrounds within 50 miles of Itasca State Park. Most of these are publicly owned. About 40 percent of the campsites within the region are located on state park, state forest or national forest lands. Among these are the campgrounds at Itasca and Lake Bemidji State Parks. County and city governments or the U.S. Army Corps of Engineers manage about 17 percent of the available campsites within the region.

Resorts - There are over 200 privately owned resorts within the region. These are located throughout the region and range from rental cabins to hotel-like accommodations. In addition, Itasca State Park's Douglas Lodge offers resort accommodations and food service to visitors. Rental cabins are also available at Itasca's Bear Paw Campground.

Day Use

Boat Accesses - Several popular recreational lakes are located within this region that offer over 810 publicly and privately administered water accesses. Nearly 50% of the accesses are managed by government agencies. The DNR, Trails and Waterways Unit is responsible for the majority of the publicly owned boat accesses in the region. In addition, the U.S. Fish and Wildlife Service, the U.S. Forest Service, county governments, and city governments administer several public accesses. Itasca State Park provides developed accesses to Lake Itasca, Lake Ozawindib, Elk Lake and Mary Lake. Privately owned accesses are most often administered as part of a resort operation. A public access is also provided at Lake Bemidji State Park.

Picnic Grounds/ Beaches - Several public picnic grounds and beaches are dispersed throughout the region. Most of the picnic grounds are on state forest, national forest, or county lands. Similarly, most of the public beaches are managed by DNR Forestry, the U.S. Forest Service and county governments. Itasca State Park offers a picnic ground and swimming beach on the eastern shoreline of Lake Itasca. Lake Bemidji State Park offers swimming and picnicking opportunities along the north shore of Lake Bemidji. Many of the city parks in the region also provide picnic grounds and/ or beaches. Finally, many of the region's private resorts and campgrounds also offer picnic areas and swimming beaches to resort guests.

Trails

Opportunities to enjoy the region's trails span the four seasons, serve a variety of trails users, and are located throughout the region. Table 2 indicates the miles of trails within the 50 mile region by administrative entity. The figures in the table are based on the best available information and are constantly changing as new trails are developed, old trails are surfaced, and trail use patterns change. These figures represent only those designated trails and do not reflect state forest and national forest roads that might be open for trail activities.

Table 2. Types and Miles of Trails Within 50 miles of Itasca State Park

Administrator	Hiking	Horseback	Mt. Biking	Paved Biking	X-C Skiing	Snowmobiling	ATV
City	4	0	0	0	16	0	0
*City GIA	0	0	0	0	1	97	0
*County GIA	5	0	0	0	69	1406	0
County	42	0	0	0	43	16	0
DNR-Forestry	35	31	0	0	24	307	25
DNR-Parks & Recreation	47	0	5	8	40	34	0
DNR-Trails & Waterways	48	48	113	67	0	113	0
U.S. Fish & Wildlife	41	0	0	0	8	0	0
U.S. Forest Service	162	151	0	26	129	0	0
Public Subtotal	384	230	118	101	330	1973	25
Private Subtotal	5	0	6	0	76	35	0
Total	**389**	**230**	**124**	**101**	**406**	**2207**	**25**

*Grant-in-Aid trails

Hiking Trails - There are over 380 miles of hiking trails in the region surrounding Itasca State Park. Most of these trail opportunities are in the area east of the park. Many of these trails are in the Chippewa National Forest. These facilities are easily accessible from Itasca State Park. County governments also manage approximately 42 miles of hiking trails. The Heartland State Trail, administered by the MNDNR, Trails and Waterways Unit offers hiking opportunities in Hubbard and Cass Counties between Park Rapids and Walker. Included in the region's hiking trail total are nearly 33 miles of hiking trails within Itasca State Park and 14 miles within Bemidji State Park. Included in the overall mileage is also a portion of the North Country National Trail which, when completed will extend from Port Henry, New York (on the shores of Lake Champlain) to the Lewis and Clark National Historic Trail in North Dakota.

Horseback Trails - There are over 230 miles of horseback trails in the region. Over half of these trails are in the Chippewa National Forest. MNDNR, Forestry administers several miles of horseback trails, mostly in the Paul Bunyan State Forest. Both of these trail administrators have plans for expansion of their horseback trail systems. The Heartland Trail also offers over 40 miles of horseback trails in Hubbard and Cass Counties between Park Rapids and Walker. In addition, several state forest roads are open to horseback riding in the vicinity of the park and several private stables offer riding opportunities in the region.

Mountain Biking Trails - There are over 100 miles of trails for use by mountain bikers within the region. Most of these trail opportunities are managed by the MNDNR, Trails and Waterways Unit on the Paul Bunyan and Heartland State Trails. Mountain biking also occurs on national and state Forest land within the region. These facilities are easily accessible from Itasca State Park. About 5 miles of mountain biking trails are also available at Lake Bemidji State Park.

Surfaced Biking Trails - There are approximately 100 miles of paved bicycling trails in the region. Most of these trail opportunities are in the area east of Itasca State Park. The Heartland and Paul Bunyan State Trails offer several miles of paved bicycling trails. The Goose Lake Trail in the Chippewa National Forest provides 16 miles of bicycling opportunities. Included in the 100 mile total are the bicycle trails within Itasca and Lake Bemidji State Parks. In addition, some highways in the area have designated bicycling lanes or have been designated as bicycle routes by the Minnesota Department of Transportation. Among these are US Highway 71 which forms much of the eastern boundary of Itasca State Park.

Cross - Country Skiing Trails - There are over 400 miles of cross-country skiing trails in the region. Most of these trail opportunities are on public lands. The Chippewa National Forest contains over 120 miles of cross-country skiing trails. The state's County and City Grant-in-Aid program provides assistance for over 70 miles of ski trails. City and county governments in the region administer an additional 43 miles of skiing trails. In addition, skiing opportunities exist in the region's state and national forests. Itasca State Park offers over 30 miles of skiing trails and Lake Bemidji State Park provides over 9 miles of ski trails.

Snowmobile Trails - There are over 2200 miles of snowmobile trails available in the region. Most of these trails (1,400 miles) are founded through the state's Grant-in-Aid program to county

and city governments. An additional 300 miles are available on state forest lands throughout the region and 112 miles are available on the Heartland and Paul Bunyan State Trails. Itasca State Park provides approximately 30 miles of snowmobile trails and Lake Bemidji State Park offers 3 miles of groomed trails.

ATV Trails - There are at least 25 miles of ATV (All-Terrain-Vehicle) trails in the region. These trail opportunities are largely found in Buena Vista State Forest in central Beltrami County. In addition, several miles of state forest roads are available for ATV use in the Paul Bunyan State Forest and White Earth State Forest.

Itasca State Park's Benefit to the Regions

Itasca State Park benefits both the ecological and socio-economic regions surrounding the park. The 32,000 acre park provides a significant sanctuary for many animal and plant species that include some of Minnesota's endangered, threatened or species of special concern. Among these are the gray wolf, trumpeter swan, bald eagle, and various orchid species. In addition, the park contains a 2,000 acre Scientific and Natural Area designated to recognize the significance of mature red and white pine forests and their associated vegetation types reflective of the Pine Moraines and Outwash Plains Landscape Region. The park also protects nearly 100 lakes and streams, the headwaters of the Mississippi River, and some of the largest contiguous blocks of old-growth pine forests on public land in Minnesota. The park's biological diversity and national significance as the Headwaters of the Mississippi have made it the site of major scientific research projects almost since the park was established. The University of Minnesota maintains a biological field station within the park that serves as a classroom and research facility for several hundred students and faculty each year. Much of the research conducted in the park has been done through the Itasca field station. This unique mix of natural habitat, educational resources, and research sites provides a range of environmental benefit attainment opportunities that include increased environmental stewardship, understanding of human dependency on the natural environment, awareness of environmental issues, environmental protection, and environmental ethics.

Beyond these important environmental benefits, Itasca State Park provides significant benefit attainment opportunities for the communities surrounding the park. In a recent research project conducted by the University of Minnesota, community leaders from the area surrounding the park identified several community benefits that are attained from Itasca State Park. Among the most important of these were attraction of tourism dollars, preservation/ conservation of various natural ecosystems, chances to experience unique outdoor recreation opportunities, a natural setting in which the community can take great pride, a greater understanding of the natural environment, a feeling that the community is a special place in which to live, and a sense of security that the natural environment will be protected (Stein and Anderson, 1998).

Itasca State Park also generates significant economic benefits within the region from employee wages, expenditures to local businesses, and tourism dollars. The park employs approximately 85 seasonal and 17 full-time year round people annually. Most of these employees come from local

communities. In addition, the park spends a substantial portion of its annual budget on supplies, services, and contract vendors from the region. The park also attracts approximately 500,000 visitors annually. Although the majority of the park's visitors come from Minnesota, the park receives visitors from around the United States, Canada, and the world to the area. In a 1993 survey of Itasca's visitors, Nickerson, et al. (1997) found that two-thirds of the survey respondents were repeat visitors to the park. Nearly half of the respondents also reported that their visit to the park was the primary reason for their trip from home. When asked whether they visited nearby communities during their visit, over two-thirds of the respondents reported that they did visit nearby communities. Those who visited nearby communities spent money at local gas stations, restaurants/ bars, retail stores/ gift shops, and grocery stores. Almost one-third of the respondents also reported that they stayed overnight in a nearby community at motels, resorts, friends/relatives, private campgrounds, and cottages (Nickerson, et al., 1997).

Chapter 3. Management Zoning

Introduction

Management zones are developed to identify the resource management goals, visitor expectations, and level of management activities in various areas of the park. The type of resource management actions and facility development are directed by the zone delineation.

One rationale for creating management zones is that the experiences and benefits which visitors seek vary somewhat with the setting where an activity takes place. Establishing resource management goals for each zone also allows park management staff to develop resource management programs that are appropriate for a particular zone. For example, mowing grass and active insect control may be appropriate to protect the resources found in one zone but be inappropriate in a second zone.

Creating management zones also assists in determining the types of recreation, future development, and environmental education programs that should occur within a given portion of the park. For example, drive-in camping might be consistent with a particular zone but inconsistent for other zones. Finally, defining management zones aids in efforts to provide opportunities for visitors to attain the experiences and benefits they most desire from their visits.

In short, the zoning process is a strong management tool to ensure that the commitment to resource protection, outdoor recreation, and environmental education found in the park's 100 year vision statement is honored.

Existing Zoning

The most current zone descriptions for Itasca State Park are found in the park's 1979 management plan. Six zones were identified in this plan based on each area's vegetation, wildlife, use patterns at that time, and potential for forest research. The six zones in the 1979 plan are:

- **Wilderness Sanctuary** - This area along the northwestern portion of Lake Itasca is the core of the current Scientific and Natural Area and was to be protected and perpetuated through management techniques that reflected natural processes.

- **Minimal Disturbance Areas** - Approximately 25 small to medium sized areas in the park received this designation based on the presence of particular species. These areas were to be disrupted as little as possible to perpetuate the sensitive or rare species found within them.

- **Restricted Management Zone** - This was the largest area of the park and included most of the park south and west of Lake Itasca except for the southwestern portion of the park and a significant portion of the park east of the main park drive. In this zone management actions were to "parallel natural processes wherever feasible." The primary resource management focus in this zone was to be pine regeneration.

- **Special Research Areas** - The area surrounding most of Lake Ozawindib and the park's sewage disposal area were designated as special research areas because they contained active pine reestablishment research projects.

- **Intensive Management Zone** - This zone was limited to the southwestern corner of the park that was heavily logged during the early 1900s and was dominated primarily by aspen in the uplands. Experimental management techniques that would not be used in the park's other zones such as prescribed burns, planting, seeding, and logging were to be considered for use in this zone.

- **Development Zone** - This zone included all of the major development areas that existed in 1979 (essentially the eastern, southern, and northern shores of lake Itasca from Douglas Lodge to the Headwaters Area) and an area approximately 300 ft. on either side of the major road corridors. This zone was to be intensively managed for visitor use and scenic quality.

Recommended Management Zoning

Since 1979, new resource management techniques have emerged, new recreational opportunities have developed, new development has been accomplished, and new resource and recreation management issues have evolved in the park. A State Scientific and Natural Area has been designated within the park, Wilderness Drive has been paved, and additional parcels of land have been added to the park. In addition, our understanding of zoning techniques has changed since 1979. These changes require a reevaluation of the 1979 zoning concept.

The proposed zoning concept recommends creation of three distinct management zones: (1) Scientific and Natural Zone; (2) Backcountry Zone; and (3) Concentrated Use Zone. The management objectives that were used to develop the zones, a map showing the zone boundaries, a description of each zone, and a list of the general management guidelines for each zone follows. A list of the target benefits that management actions within each zone should consider follows the zone descriptions.

General Management Goals

The management zone delineations have been guided by the following management goals:

- Adhere to the intent of the state law which mandates that state parks are to be managed to

  > ... preserve, perpetuate, and interpret natural features that existed in the area of the park prior to settlement and other significant natural,

> scenic, scientific or historic features that are present.... Park use shall be primarily for aesthetic, cultural, and educational purposes, and shall not be designed to accommodate all forms or unlimited volumes of recreational use (ORA, 1995);

- Adhere to state law establishing management guidelines for state Scientific and Natural Areas within the park's Scientific and Natural Area;

- Preserve and protect the park's critical natural and cultural resources, particularly the park's old-growth forest ecosystems;

- Provide opportunities for visitors, communities, the economy, and the environment to accrue the range of benefits associated with Itasca State Park;

- Provide a range of recreational opportunities for visitors to enjoy the natural environment but ensure protection of the critical natural and cultural resources found within the park for future generations to experience;

- Emphasize interpretation to promote stewardship of the park's natural and cultural resources;

- Focus major facility development in the Concentrated Use Zone. Locate and design facilities to have minimal negative effect on the park's natural and cultural resources. Visitors should have opportunities to venture into undeveloped areas of the park to realize desired benefits (e.g., getting away from crowds or stress relief), but facilities should still be available that allow visitors to be with others, experience excitement, and enjoy different experiences;

- Provide opportunities for visitors to experience solitude;

- Maintain the infrastructure to protect the public investment and cultural heritage found within Itasca State Park. While it is important that current visitors to the park benefit from Itasca, this use cannot detract from the ability of future generations to benefit from the park; and

- Provide facilities for the safe use and enjoyment of the park.

Scientific and Natural Area (Zone 1):

This zone is located in the northwest portion of the park and includes the Itasca Wilderness Sanctuary (Figure 3). This wilderness sanctuary was initially established in 1939 to protect a portion of the park that had not been logged, designated a National Natural Landmark by the U.S. Department of Interior in 1965, and designated a State Scientific and Natural Area by the Commissioner of Natural Resources on January 14, 1983. The SNA Zone is bounded on the east by the western arm of Lake Itasca and on the west and south by Wilderness Drive. The Itasca Wilderness Sanctuary was designated a Scientific and Natural Area at the request of the Division of Parks and Recreation because it contains some of the largest areas of old-growth pine forest in the park, habitat for several critical species, such as bald eagles, and some of the largest areas in the park where human impact has been minimal.

The principal management philosophy for this zone is found in the Minnesota State Statute governing Scientific and Natural Areas. In part this statute stipulates that

> *"State Scientific and Natural Areas shall be administered .... to preserve, perpetuate and protect from unnatural influences the scientific and educational resources within them. Interpretive studies may be provided for the general public. Physical development shall be limited to the facilities absolutely necessary for protection, research, and educational projects, and where appropriate for interpretive services."* (MS 1995, 86A.05, Subd. 5)

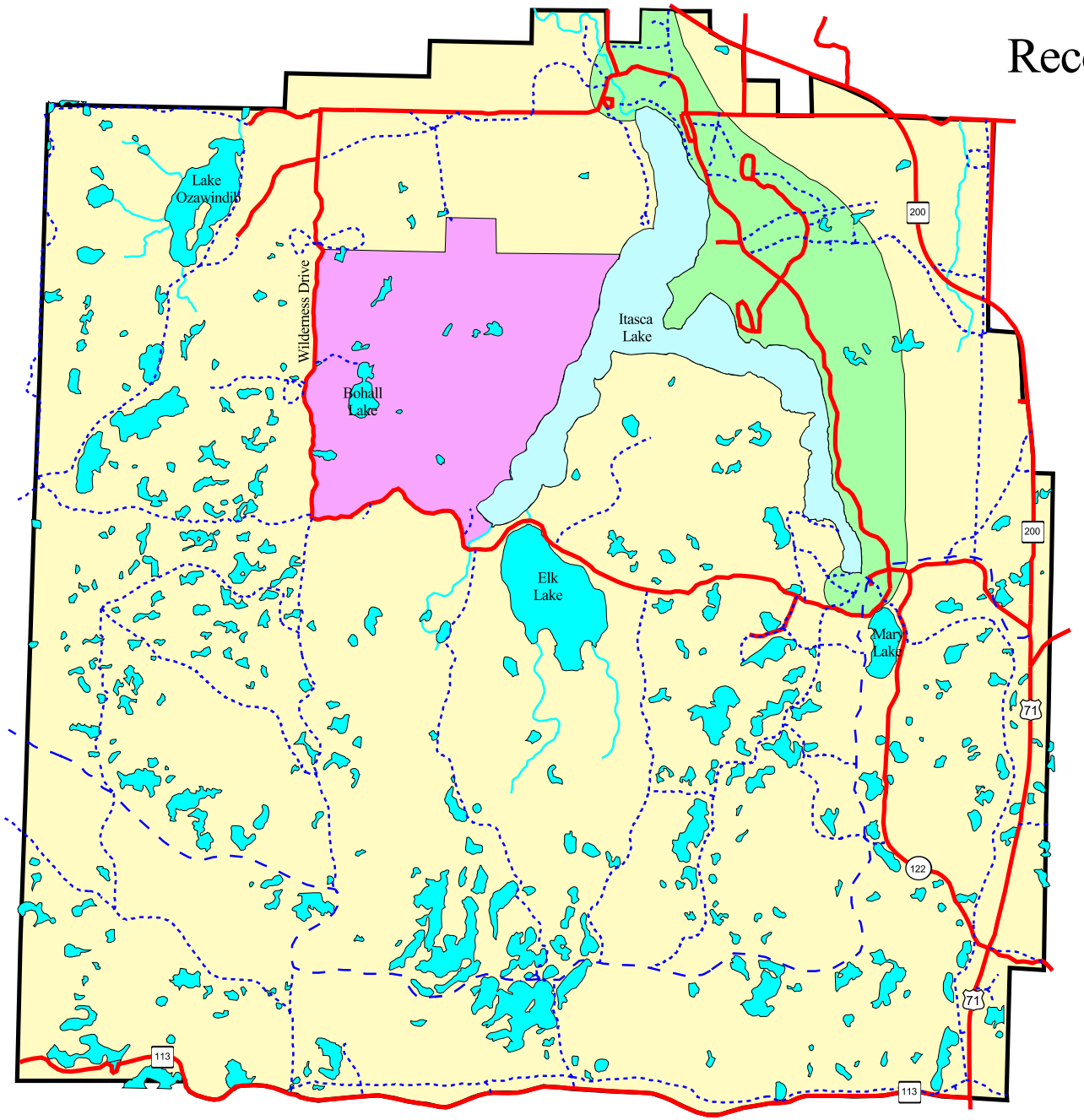
The proposed management guidelines for this zone found in Table 3 mirror the specific guidelines found in the Scientific and Natural Area statute.

Backcountry (Zone 2):

This zone is the largest zone within the park and includes the park's roads except those along Lake Itasca's eastern shore; all of the lakes within the park except Bohall Lake and Lake Itasca; the lands surrounding these lakes; the western portion of the park from the Headwaters area to the park boundary except the Scientific and Natural Area; the area from the park's southern boundary and the Douglas Lodge area; and the area between the park's eastern boundary and the park's utility lines and paved bicycle trail (Figure 3).

The intent of the guidelines found in Table 3 is that this zone should provide visitors with a natural environment that offers opportunities to experience closeness with nature, minimal contact with motor vehicles, and opportunities to enjoy a moderate amount of contact with other visitors. Natural resource management in this zone should focus on preservation or regeneration of native species, protection of natural processes, and protection of the zone's biodiversity. Although manipulation of the natural environment would be considerably less extensive than that found in Zone 3, evidence of human attempts to manage the natural environment would be present.

Figure 3. Itasca State Park Recommended Management Zones



Legend

Recommended Management Zones

- Zone 1 (SNA)
- Zone 2 (Backcountry)
- Zone 3 (Concentrated Use)
- Zone 3 Lake (Concentrated Use)

- Lakes & Streams
- Hiking Trails
- Itasca State Park Statutory Boundary
- North Country National Scenic Trail
- Roads

N

0.5 0 0.5 1 Mile

Source: DNR, Division of Parks and Recreation, 1998

Insert Management Zone Guidelines Table 3

Management actions within this zone should assume that visitors wish to use, improve, or challenge their outdoor skills in a slightly modified natural environment. A degree of self-reliance would be needed by visitors in most portions of this zone. Interpretive opportunities in this zone should emphasize use of self-guided trails, trail maps, brochures, display boards, and field guides. Guided nature hikes would also occur within this zone. Limited opportunities to operate some motorized vehicles on designated trails and roads should also be present. Such motorized use should be limited to snowmobiles, and other motor vehicles as defined by Minnesota State Park Rules and Regulations in those locations currently designated for such use. Improved roads would be present in this zone but limited to the existing entrance roads, service roads, Wilderness Drive, Lake Ozawindib Group Camp Road, Lake Ozawindib Cabin Road, and Elk Lake Group Camp Road. New service roads for park operations and maintenance may also become necessary in this zone over time.

Concentrated Use (Zone 3):

This zone includes the main park drive from the east contact station to the Headwaters; Lake Itasca; the area east of Lake Itasca to the park's utility lines and paved bike trail; the Douglas Lodge Historic Area; Dr. Robert's Trail to the Old Timers' Cabin; and the segments of Ozawindib and Deer Park Trails from Douglas Lodge to the Wilderness Drive (Figure 3).

This zone should provide visitors with exposure to a natural area which requires limited reliance on outdoor skills, minimal challenge, and easily accessible facilities. Natural resources management in this zone should be focused on preserving an aesthetically pleasing representation of native species. Human manipulation of the natural environment would be commonplace in this zone to ensure that visitors have easy access to the park's significant natural features and amenities.

Visitors to this area should expect that they will have considerable opportunity to experience other humans and some opportunities to experience privacy. This zone should also offer opportunities for exposure to a modified natural environment that involves minimal risk and limited use of outdoor skills. Interpretive programs should be more frequent and more structured than Zone 2 programs. Interpretive displays, museums, self-guided tours, naturalist led hikes, and indoor programs would be common. Amenities such as; campsites, resort facilities, toilets, electricity, and running water should be readily accessible to users. Signage and other management activities would be readily evident in this zone. Improved roads, trails, and parking lots would also be commonplace in this zone. The area should offer opportunities for both motorized and non-motorized recreation on designated routes.

Target Benefits by Management Zone

These management zone descriptions and guidelines are intended to provide a general overview of each recommended zone and its relationship to the other zones. Resource management, recreation, environmental education and development activities will occur in all three zones. However, the type of these important state park functions should be different in each zone. For example, a paved

hiking trail would be consistent with the Concentrated Use Zone but inconsistent with the Scientific and Natural Area and Backcountry Zones. However, unpaved hiking trails would be appropriate for all three zones. An additional tool that will assist managers in determining which management actions are most appropriate for each zone will be consideration of the benefits that are accrued from each zone. The particular set of target benefits (desired outcomes) that management actions in each of the zones should be geared toward are presented in Tables 4 - 7. The target visitor and community benefits displayed in these tables are, in part, based on research conducted at Itasca State Park (Nickerson, 1998; Nickerson, et al., 1997; Stein, 1997; and Stein and Anderson, 1998). Target economic and environmental benefits were selected, in part, based on research conducted in other areas of the United States and Canada (Driver, Brown, and Peterson, 1991b). Although some of the target benefits are unique to a particular management zone, many apply to more than one zone. The target benefits have been organized into four major categories: (a) visitor benefits; (b) community benefits to neighboring and state residents; (c) economic benefits to the regional, state and national economy; and (d) environmental benefits to the regional and state natural and cultural environment.

Table 4. Itasca State Park Target Visitor Benefits by Management Zone

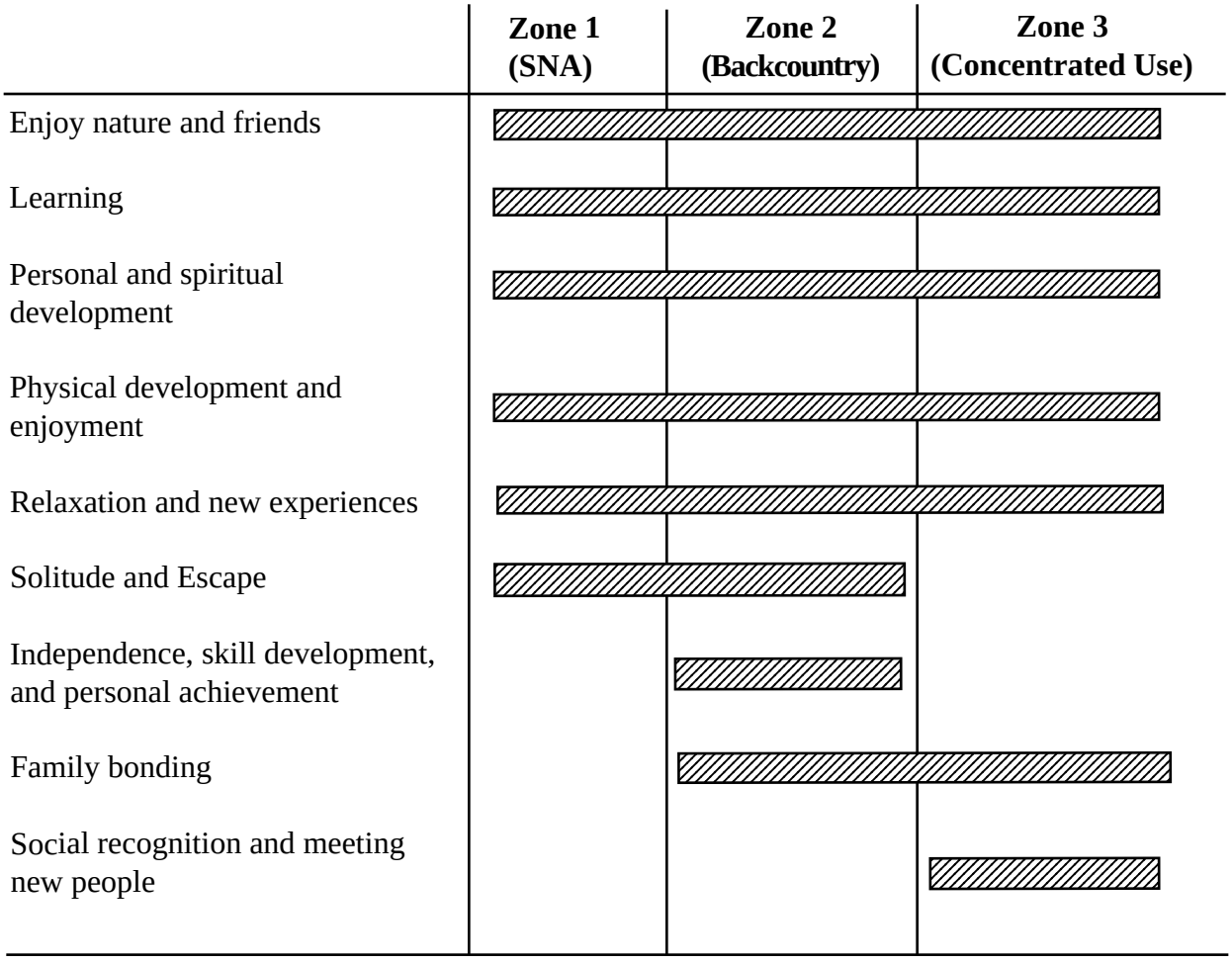


Table 5. Itasca State Park Target Community Benefits by Management Zone

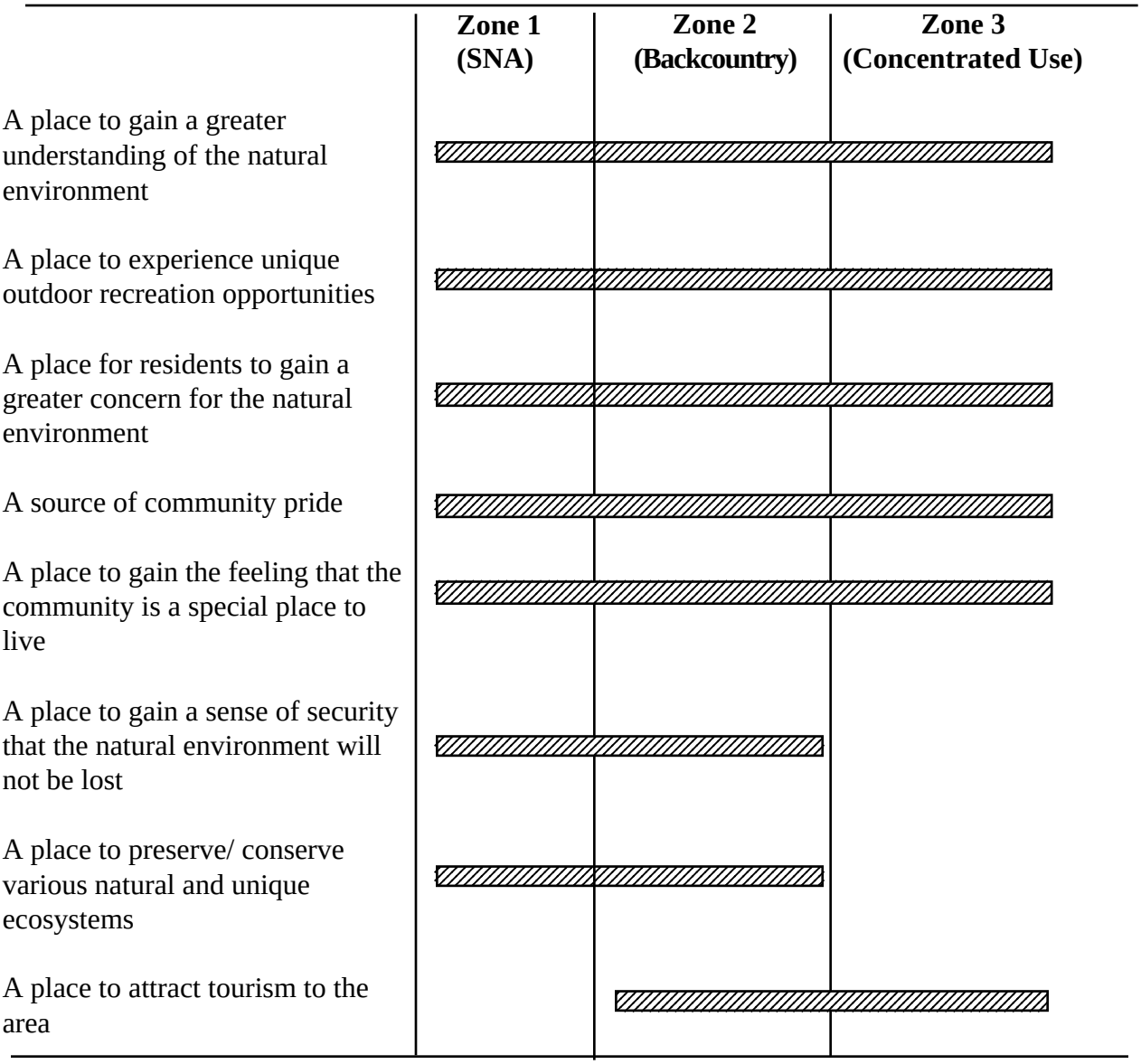


Table 6. Itasca State Park Target Economic Benefits by Management Zone

	Zone 1 (SNA)	Zone 2 (Backcountry)	Zone 3 (Concentrated Use)
Reduced health care costs	indirect	indirect	indirect
Increased productivity	indirect	indirect	indirect
Less work absenteeism	indirect	indirect	indirect
Reduced on-the-job accidents	indirect	indirect	indirect
Local and regional economic growth	indirect	direct	direct
Contribute to net national economic development	indirect	direct	direct
Contribute to international balance of trade through tourism	indirect	direct	direct
Employment opportunities for local citizens	indirect	direct	direct

Direct = Creates a direct opportunity to benefit.

Indirect = Creates an indirect opportunity to benefit.

Table 7. Itasca State Park Target Environmental Benefits by Management Zone

	Zone 1 (SNA)	Zone 2 (Backcountry)	Zone 3 (Concentrated Use)
Environmental stewardship and preservation			
Understanding human dependency on the environment			
A place to enhance environmental ethics			
Increased awareness of environmental issues			
Environmental protection			

Chapter 4. Natural Resource Management

Introduction

Among the myriad natural features found within Itasca State Park are the Headwaters of the Mississippi River, old-growth conifer and hardwood forests, over 100 fresh water lakes and wetlands, and many animal and plant species. The park also includes the Itasca Wilderness Sanctuary which is both a National Natural Landmark and a State Scientific and Natural Area.

This chapter begins with a section which outlines the natural resource management program's goals. The next section of the chapter identifies the target benefits associated with the natural resource management program. The middle section presents an inventory and description of the park's natural history and existing natural resources. A section near the end of the chapter lists the major resource management recommendations and associated actions to accomplish the program goals and provide opportunities for realization of the target benefits. The chapter ends with a section on research and monitoring. This chapter and its associated references serves as the overall natural resource management plan for the park.

Natural Resource Management Goals

MNDNR and the University of Minnesota (1994) identified the following major long term resource management goals for Itasca State Park:

- Restore pine stands in high use areas where they have been destroyed or damaged by intensive use;
- Regenerate pine communities in selected areas; and
- Restore and maintain the remainder of the park's upland and wetland forest communities to desired conditions.

These resource management goals have been adopted for the park. Additional resource management goals include:

- Preserve, restore and protect the significant natural and cultural resources found within the park;
- Follow resource management practices that focus on ecosystems rather than single species management;
- Manage for those species known to be native to Itasca State Park prior to European settlement wherever possible;

- Manage for realization of the park's target benefits; and

- Develop an ongoing research and monitoring program.

Although these goals should guide resource management activities throughout the park, translation of the goals into specific management actions will differ by management zone. The zone descriptions, guidelines, and target benefits presented in the management zoning chapter will aid in selecting specific resource management actions for each management zone.

Target Benefits

Itasca State Park's resource management program offers a variety of opportunities to attain several of the park's target benefits. The target benefits that are most relevant to the resource management program from each of the four benefit types (environmental, visitor, community and economic) are listed below.

Environmental benefits: The park's resource management program should provide opportunities to attain the five target environmental benefits identified for the park (Table 7). These are (a) environmental stewardship and preservation, (b) providing a place for understanding human dependency on the environment, (c) providing a place to enhance environmental ethics, (d) fostering increased awareness of environmental issues, and (e) environmental protection.

Visitor benefits: Because most of the visitor activity that occurs within the park is centered around the park's natural environment, the resource management program plays a major role in the effort to provide opportunities for attainment of the park's nine target visitor benefits (Table 4). The target visitor benefits that are most closely identified with the resource management program are (a) providing opportunities for enjoyment of nature and friends; (b) learning; (c) solitude and escape; (d) relaxation; and (e) new experiences. Other important visitor benefit opportunities that the resource management program contributes to are enjoyment of a feeling of wildness and spiritual renewal.

Community benefits: Itasca's resource management program contributes to opportunities for realization of most of the park's target community benefits (Table 5). Those target community benefits most closely associated with the resource management program are (a) increased understanding of the natural environment; (b) increased concern for the natural environment; (c) increased community pride; (d) increased feeling that the community is a special place to live; (e) enhanced sense of security that the natural environment will not be lost; and (d) preservation/ conservation of various natural and unique ecosystems.

Economic benefits: Itasca's resource management program contributes indirectly to the realization of many of the park's target economic benefits (Table 6). The target economic benefit most closely associated with the resource management program is economic growth from visitors drawn to the area by the park's significant natural and cultural resources.

Summary of Existing Conditions

Climate

Itasca State Park's climate is an important factor in maintaining the park's forest and aquatic ecosystems. The park lies near the intersection of three dominant air masses: (a) an arctic air stream that extends south from Canada into the northcentral United States during the winter; (b) a Pacific air wedge that follows the path of strong westerly winds as they move across the northern United States; and (c) a tropical air stream that flows northward from the Gulf of Mexico especially during the summer months. Depending on the season, these air masses characterize the climate of northwestern Minnesota.

The arctic air mass prevails during the winter months and produces extremely cold temperatures. The average daily minimum temperature recorded at Itasca during January for the 1961 - 1990 period was -7.6° Fahrenheit (USDA, Natural Resources Conservation Service, 1997). The second common winter weather event is heavy snowfalls caused by the combination of Pacific air masses and moist Gulf air over the area. The average annual snowfall recorded at Itasca for the 1961 - 1990 period was 54.6 inches (USDA, Natural Resources Conservation Service, 1997). Incursions of arctic air often closely follow heavy snowfalls to produce severe blizzard conditions with deep snow drifts.

Summer conditions present a different set of conditions that can often be as extreme as the winter climate. The warm, moist tropical Gulf air mass combines with westerly winds in the summer months to produce warm to hot days. The average maximum daily temperature recorded at Itasca during July for the 1961 - 1990 period was 81.2° Fahrenheit (USDA, Natural Resources Conservation Service, 1997). When the summer Gulf air combines with a blast of arctic air, heavy rain showers and thunderstorms can result. The average annual rainfall recorded at Itasca for the 1961 - 1990 period was 26.7 inches (USDA, Natural Resources Conservation Service, 1997).

The result of these seasonal fluctuation is a climate characterized by cold winters and warm summers with significant precipitation and relatively short growing seasons. Itasca's first frost normally occurs in late September or early October and the park's first frost-free days usually occur in mid-May or early June. In nine years out of ten daily minimum temperatures exceeded 32° Fahrenheit for only 90 days a year (USDA, Natural Resource Conservation Service, 1997).

Geology

Itasca State Park's landscape was shaped by glacier activity. Examination of the glacial features that remain in the park provide scientists with clues on how the Itasca region was formed, but the complexity of the region's landscape makes a precise description of how the region was formed elusive. As scientists continue to study the region and learn more about glacial activity in Minnesota, more comprehensive explanations will be possible. The following description of the park's geology is based on the best information currently available.

During the Great Ice Age, Itasca State Park, like most of Minnesota, was covered by glaciers. Each of these glaciers followed the path of least resistance as they advanced and retreated. Moving under the control of gravity and topography, they flowed through depressions in the bedrock. The final glacial advance into the Itasca region (the Wisconsin Glaciation), is the advance that permanently left its mark on Itasca State Park. This glacial period began about 75,000 years ago when the ice sheet slowly flowed south from Canada to cover most of Minnesota. This ice sheet, commonly called the Laurentide Ice had multiple lobes. The last lobe to cover the Itasca region was the Wadena Lobe. It stagnated over the region, creating the Itasca Moraine. A moraine is a pile of rocks and sediment deposited at the terminus (end) of a glacier when the glacier is at a standstill and the ice slowly melts, so that the material that had been in the ice piles up. It is estimated that formation of the Itasca Moraine happened between 14,000 and 20,000 years ago, while the glacier was potentially at a standstill over the region for several hundred years.

While the Wadena Lobe covered Itasca, surface melting of the glacier also occurred. This additional glacial activity also helped shape the Itasca region. Meltwater from the glacier's surface seeped through crevasses in the ice and flowed south under the ice cover. These subglacial streams carried large amounts of sediment, and flowed with tremendous velocity. The streams also traveled through ice tunnels and eroded valleys (tunnel valleys) 15 - 60 m deep into the drift (debris left by previous glaciers) below the ice.

Eventually the climate changed, and the glacier's standstill ended. The ice began to thin, the glacier began to retreat, and the water flowing from the ice decreased in volume and velocity over time. Because of this, the streams no longer had the energy to keep all the ice tunnels open, carry all the heavy coarse material, or erode the substratum. Some of the ice tunnels became occupied by smaller streams that continued to deposit sand and gravel. As ice walls surrounding these tunnels melted away, water in the tunnels eventually disappeared. This left behind sinuous ridge-like mounds of sand and gravel, called eskers, winding down the old tunnel valleys.

At the same time, other tunnels were no longer used by the underground streams. These tunnels filled with ice chunks which were buried by rocks and sediment when the ice tunnel walls and roofs collapsed. When the ice eventually melted (often many hundreds of years later), a series of depressions were left, creating the region's present day lakes and wetlands. Most of the lakes and wetlands in Itasca State Park are believed to have been formed by this process. Certainly, Lake Itasca occupies one of these depressions. The Mississippi River also occupies one of these depressions.

Approximately 12,000 years ago, another glacial lobe came close to Itasca State Park. This lobe did not cover the park, however, its glacial drift left a thin coating over much of what had been deposited by the Wadena Lobe, and its meltwaters used some of the old abandoned tunnel valleys, including those of Lake Itasca and Elk Lake.

All of this glacial activity created the diverse and irregular landscape found in Itasca State Park today. This irregular landscape is often referred to as "knob and kettle" topography where the knobs are mounds of debris and the kettles are depressions.

Soils

The United States Department of Agriculture, Natural Resources Conservation Service has recently completed soil surveys for Clearwater, Becker and Hubbard Counties (1997, 1995, and 1997, respectively). Final reports from the surveys are in various stages of completion. Soil survey data is collected and mapped in 5 acre plots that are 5 feet deep. The information in this section is based on these soil surveys. Copies of the soil surveys can be obtained from the USDA, Natural Resources Conservation Service or local Soil and Water Conservation District staff.

The soils found in Itasca State Park have been formed through the interaction of five major factors: parent material left by glacial activity; climate; plants and animals living in the area; topography; and the length of time these factors have acted on the parent materials (USDA, Natural Resources Conservation Service, 1997). The parent material for the majority of the park's soils is either glacial till or glacial outwash. Glacial deposits as deep as 300-500 feet cover substantial portions of all three counties. The park's continental climate characterized by cold winters and warm to humid summers with wide temperature variations throughout the year has subjected the parent material to shrinking and swelling associated with freezing and thawing. These climatic influences have aided in breaking up the parent materials and developing the park's current soil textures. A variety of plant and animal organisms have inhabited the park since the glacial period and left their impact on the soil types through formation of organic material. The park's knob and kettle topography has had a major impact on the formation of soil types found within the park. In level areas, precipitation generally does not run off and is absorbed through the soil profile. This process creates soils that are often permanently or seasonally saturated. In the steeper areas, soils are generally better drained, associated with lower water tables, and brighter in color with thinner soil horizons than soils in level areas. Temporally, the soils in the park are relatively young and have been formed in the last 10,000 - 20,000 years (USDA, Natural Resources Conservation Service, 1997).

The interaction of these soil formation factors has created a mosaic of over 60 different soil types within the park. Within this mosaic, the Sol - Sugarbush Complex, the Sugarbush - Two Inlets Complex, and the Two Inlets - Eagleview - Steamboat Complex are the three most dominant soil types in the park's upland areas. The park's lowland areas are dominated by two soil types (ponded Haslie, Seelyeville and Cathro muck; and Mooselake and Lupton muck). A brief description of these five soil types follows. For purposes of this management plan, the park's soil types have also been grouped according to soil texture, slope and upland conifer suitability. A discussion of these characteristics follows the descriptions of the park's five major soil types.

Sol - Sugarbush Complex

Commonly found on the summits and back slopes of moraines, this soil type is characterized by a moderate amount of organic material, a sandy loam surface, glacial till parent material, a very deep profile (in excess of 60 inches), and good drainage. The dominant parent material for this soil type is glacial till. This is the most dominant soil type found in Itasca State Park and is commonly found in many of the park's upland areas. Although the soil type is dispersed throughout the park, its heaviest concentrations are in the Clearwater and Becker County portions of the park. Many of the park's existing facilities are constructed on this soil type.

Sugarbush - Two Inlets Complex

This soil type is commonly found on the summits and back slopes of outwash plains and moraines and is characterized by a moderately low amount of organic material, a sandy loam surface, a very deep profile, and good drainage. The dominant parent material for this soil type is glacial outwash. Pockets of this soil type are found throughout the park, but its largest concentrations are found in the southern Clearwater and northern Becker County portions of the park. A variety of land uses occur on this soil type from trails and roads to various forest habitats.

Two Inlets - Eagleview - Steamboat Complex

Commonly found on the summits and back slopes of moraines, this is a dry soil type characterized by a low amount of organic material, a loamy sand surface, a very deep profile, and good drainage. The dominant parent material for this soil type is glacial outwash. This soil type is not found in the Clearwater and Becker County portions of the park but it is the dominant soil type found in the Hubbard County portion of the park. Among the land uses that occur on this soil type are the park's east and south entrance roads, trails adjacent to these roads and forest habitats surrounding these roads.

Haslie, Seelyeville and Cathro Muck

This is a ponded soil type commonly found in lake plains, outwash plains, and moraines that is characterized by a very high amount of organic material, a muck surface layer, a very deep profile and very poor drainage. The dominant parent material for this soil type is organic material, glacial till or glacial outwash. This soil type is dispersed throughout the park but is concentrated in the lowlands surrounding the park's lakes and wetlands.

Mooselake and Lupton Muck

This soil type is commonly found on lake plain depressions and moraines and is characterized by a very high amount of organic material, a mucky peat surface layer, a very deep profile, and very poor drainage. The dominant parent material for this soil type is organic material. This soil type is dispersed throughout the park but is concentrated in the lowlands surrounding the park's lakes and wetlands.

Soil Groups

For purposes of this management plan the park's soil types have been grouped by soil texture (Figure 4) and slope (Figure 5) according to similarities among the various soil types. Because pine regeneration is a major resource management goal for Itasca State Park, Figure 6 displays those soils with "very poor" to "good" suitability for upland conifer growth based on depth of the root zone,

surface layer texture, amount of water available, wetness, salinity, and flooding (USDA, Natural Resources Conservation Service, 1997). More detailed profiles and maps of the park's individual soil types are available from the Division of Parks and Recreation and the USDA, Natural Resources Conservation Service data.

Most of the soils in the park are within the complex or muck texture groups with 15 percent or less slope. However, several smaller pockets of silt loams, sandy loams, and very fine sandy loams are located throughout the park. There are also several areas with slopes in excess of 15 percent dispersed throughout the park. Many of the park's soils have good potential to support upland conifer growth (conifer suitability). Those soil types that have "fair" to "poor" upland conifer suitability are primarily located in low areas dominated by mucks and sandy loam soils.

Soil texture, slope, and conifer suitability are among the important soil characteristics to consider when making management decisions. These and other soil characteristics make certain soils more suitable for particular resource management activities and recreation facility development than other soil types. Table 8 lists some of the major soil characteristics and facility limitations for each of the park's soil types. Figure 7 presents a detailed view of the soil types surrounding the Headwaters of the Mississippi River and serves as an example of the mosaic of soil types found in a given section of the park. This level of detail is available for the entire park from soil maps produced by the USDA, Natural Resources Conservation Service. It is important to examine soil characteristics when making land use decisions. For example, the Headwaters of the Mississippi is immediately surrounded by Haslie Muck (Figure 7) which has poor conifer suitability and severe limitations for facility development (Table 8). Yet, just a short distance to the northwest of the actual headwaters, the soil type changes to a Sugarbush - Two Inlets complex with a 1 - 8 % slope (Figure 7). This soil type has good conifer suitability and low to moderate limitations for many of the types of facilities commonly found in state parks (Table 8). At the same time, the area to the near northeast of the headwaters is Roscommon loamy sand (Figure 7). This soil type has poor conifer suitability and severe limitations for facility development. In this case, the soil characteristics surrounding the headwaters area suggest that it would be more appropriate to place facilities slightly to the northwest of the actual headwaters than it would be to construct them right at headwaters or to the near northeast. Similar analyses of soil characteristics can be made for the remainder of the park on a case-by-case basis to aid in identifying potential sites for pine regeneration, determining trail alignment, utility placement, and other facility placement.

Figure 4. Itasca State Park Soils by Texture

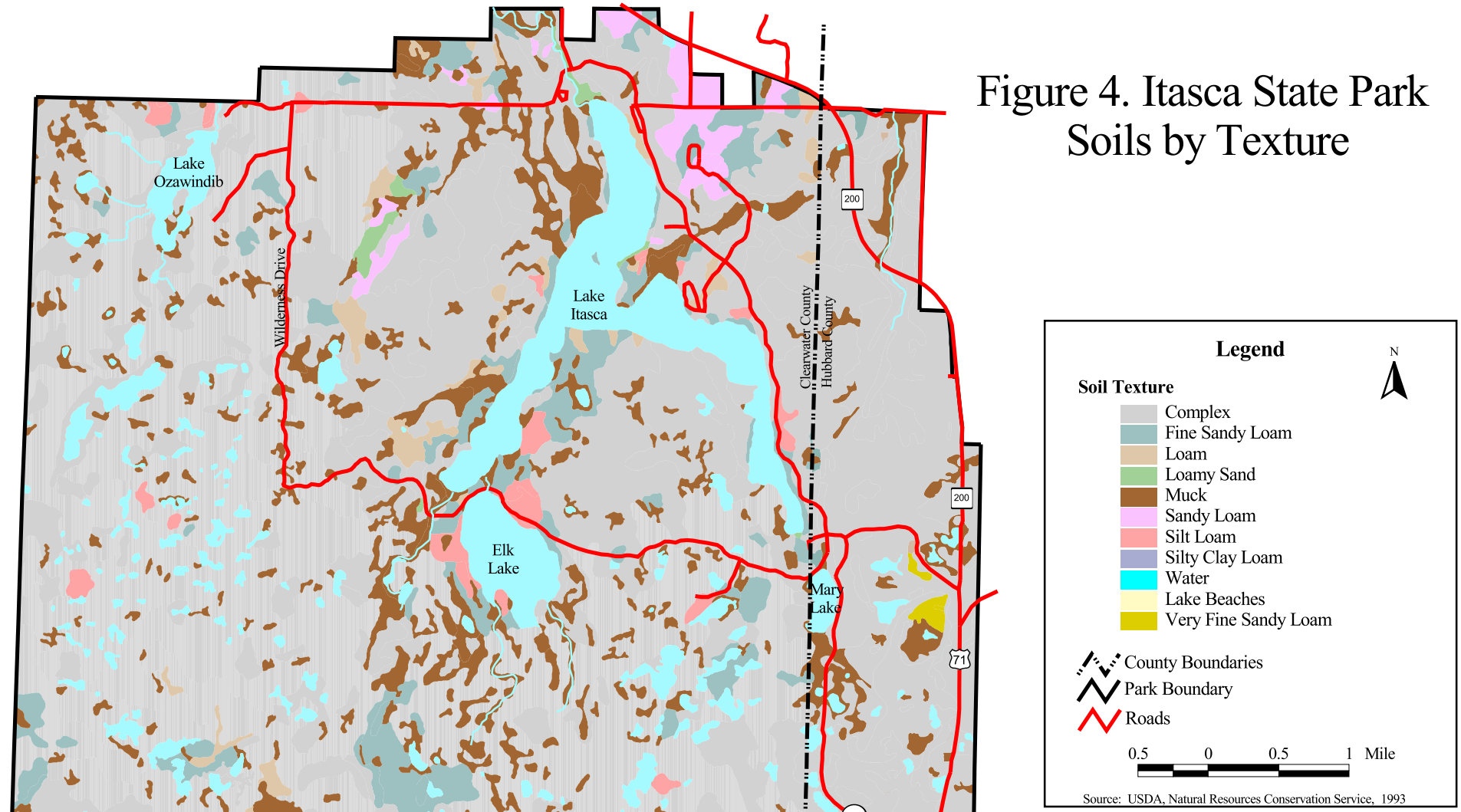
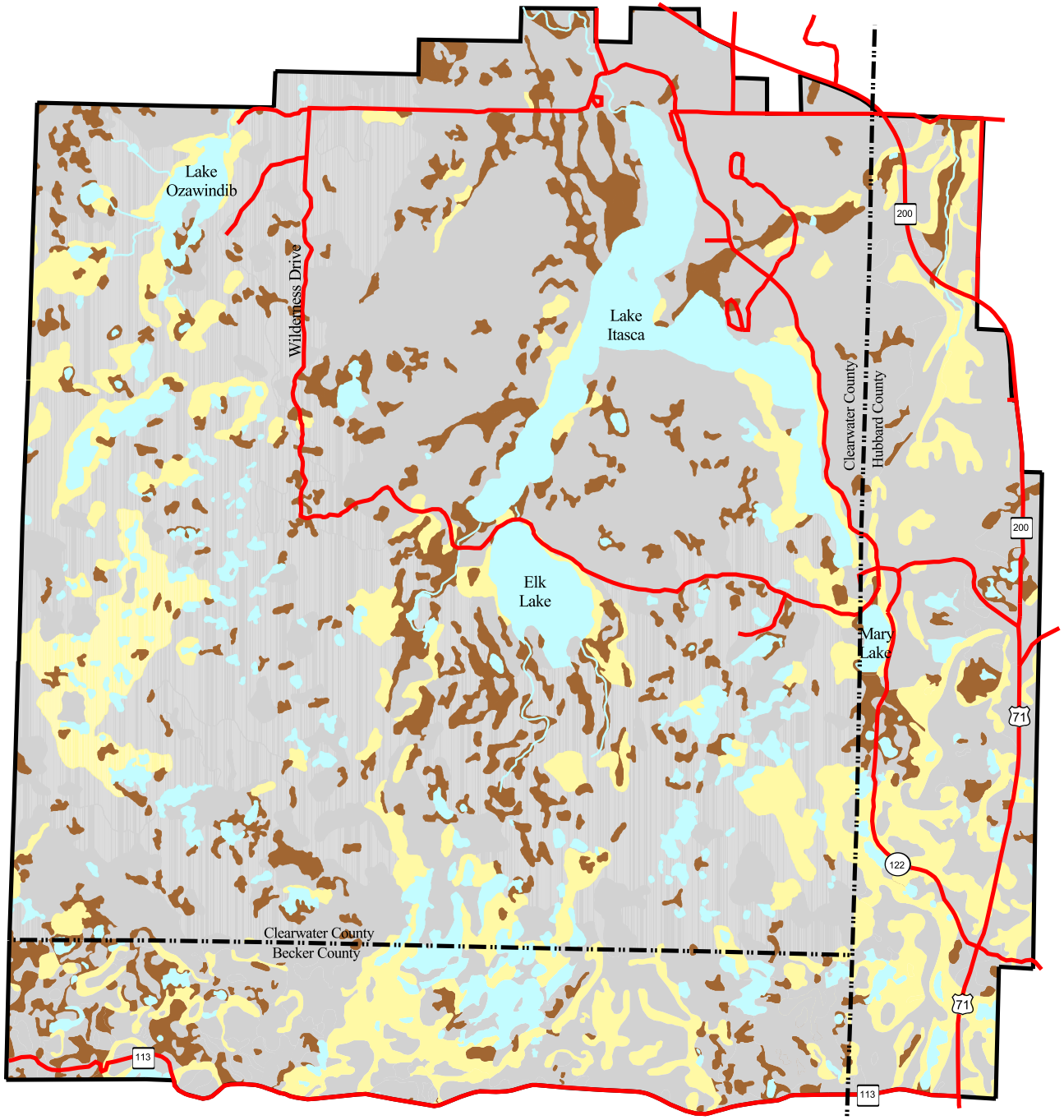


Figure 5. Itasca State Park Soils by Slope



Legend

N

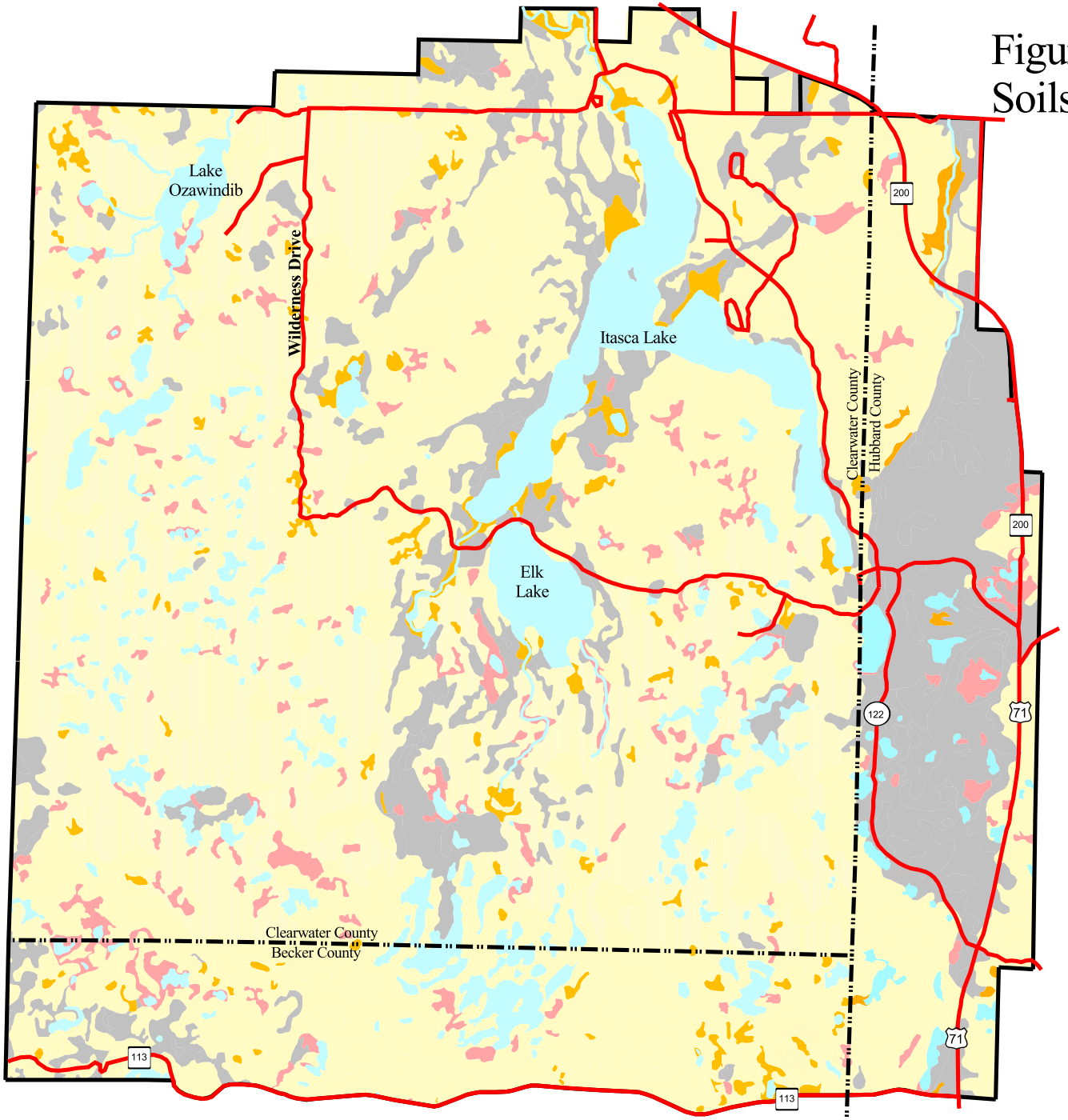
Slope

- ≤ 15%
- > 15%
- Muck
- Water
- County Boundaries
- Roads
- Park Boundary

0.5 0 0.5 1 Mile

Source: USDA, Natural Resources Conservation Service, 1997

Figure 6. Itasca State Park Soils by Upland Conifer Suitability



Legend

N

Conifer Suitability
- Good
- Fair
- Poor
- Very Poor
- Water

- County Boundaries
- Park Boundary
- Roads

0.5 0 0.5 1 Mile

Source: USDA, Natural Resources Conservation Service, 1997

Table 8. Itasca State Park Soil Characteristics

Soil Number	Slope	Description	Surface Texture	Conifer Suitability	Septic Tank Absorption Fields	Sewage Lagoon Areas	Buildings*	Roads	Landscaping	Camp Areas	Picnic Areas	Playgrounds	Paths & Trails
40 B	2- 8%	Nebish loam	Loam	Good	M	M	L	S	L	L	L	M	L
40 C	8 - 15%	Nebish loam	Loam	Good	M	S	M	S	M	M	M	S	L
121	1 - 3%	Wykeham fine sandy loam	Fine Sandy Loam	Fair	S	S	M	M	S	L	L	M	L
125	1 - 3%	Beltrami Loam	Loam	Fair	S	S	M	S	L	L	L	M	L
133 A	0 - 2%	Dalbo silt loam	Silt Loam	Good	S	S	S	S	L	L	L	L	S
133 B	2 - 8%	Dalbo silt loam	Silt Loam	Good	S	S	S	S	L	L	L	M	S
167 A	1 - 3%	Baudette silt loam	Silt Loam	Fair	S	S	M	S	L	L	L	M	L
202	0 - 3%	Meehan loamy sand	Loamy Sand	Fair	S	S	S	M	S	S	S	S	M
205	0 - 3%	Karlstad sandy loam	Sandy Loam	Fair	S	S	M	M	M	L	L	M	L
267 B	2 - 8%	Snellman - sandy loam	Sandy Loam	Good	M	M	L	M	M	L	L	M	L
267 C	8 - 15%	Snellman - sandy loam	Sandy Loam	Good	M	S	M	M	M	M	M	S	L
346	0 - 2%	Talmoon loam	Loam	Good	S	S	S	S	S	S	S	S	S
503 B	1 - 8%	Balmlake fine sandy loam	Fine Sandy Loam	Good	M	M	L	M	L	L	L	M	L
505 B	2 - 8%	Debs silt loam	Silt Loam	Good	M	M	L	S	L	L	L	M	L
505 C	8 - 15%	Debs silt loam	Silt Loam	Good	M	S	M	S	M	M	M	S	L
505 E	15 - 30%	Debs silt loam	Silt Loam	Good	S	S	S	S	S	S	S	S	M
526 C	0 - 15%	Steamboat-Two Inlets-Seelyeville complex, pitted	Complex	Good	S	S	M	M	M	M	M	S	S
526 E	0 - 35%	Steamboat-Two Inlets-Seelyeville complex, pitted	Complex	Good	S	S	S	S	S	S	S	S	S
540	0 - 1%	Seelyeville muck	Muck	Poor	S	S	S	S	S	S	S	S	S
541	0 - 1%	Rifle mucky peat	Muck	Poor	S	S	S	S	S	S	S	S	S
543	0 - 1%	Markey muck	Muck	Poor	S	S	S	S	S	S	S	S	S
544	0 - 1%	Cathro muck	Muck	Poor	S	S	S	S	S	S	S	S	S
561	0 - 1%	Bullwinkle muck	Muck	Fair	S	S	S	S	S	S	S	S	S
564	0 - 3%	Friendship loamy sand	Loamy Sand	Good	S	S	M	S	M	M	M	M	M
672	0 - 3%	Willosippi loam	Loam	Good	S	S	S	S	S	S	S	S	S
675 C	3 - 15%	Two Inlets-Eagleview-Steamboat complex, pitted	Complex	Fair	S	S	M	M	S	S	S	S	M
675 E	10 - 30%	Two Inlets-Eagleview Steamboat complex, pitted	Complex	Fair	S	S	S	S	S	S	S	S	S
675 G	35 - 65%	Two Inlets-Eagleview-Steamboat complex, pitted	Complex	Fair	S	S	S	S	S	S	S	S	S
709 B	2 - 8%	Lengby fine sandy loam	Fine Sandy Loam	Fair	M	S	L	M	L	L	L	M	L
709 C	8 - 15%	Lengby fine sandy loam	Fine Sandy Loam	Fair	M	S	M	M	M	M	M	S	L
709 E	15 - 30%	Lengby fine sandy loam	Fine Sandy Loam	Fair	S	S	S	S	S	S	S	S	M
746	0 - 1%	Haslie muck	Muck	Poor	S	S	S	S	S	S	S	S	S
775 B	1 - 8%	Sugarbush - Two Inlets complex	Complex	Good	S	S	L	L	M	L	L	M	L
775 C	8 - 15%	Sugarbush - Two Inlets complex	Complex	Good	S	S	M	M	M	M	M	S	L
776 C	8 - 15%	Snellman - Sugarbush complex	Complex	Good	M	S	M	M	M	M	M	S	L
797	0 - 1%	Mooselake and Lupton Soils	Muck	Fair	S	S	S	S	S	S	S	S	S

Chart Legend - Soils Suitability/Characteristics

L - (Low) Limitations for a stated use are minor and can be overcome easily.

M - (Moderate) Limitations for a stated use can be overcome by special planning, design, or intensive maintenance.

S - (Severe) Limitations for a stated use generally require a major soil reclamation, special design, or intensive maintenance.

*Based on buildings with a basement or foundation

Conifer Suitability - Ability of a soil type to support upland coniferous plants such as red, white and jack pine trees; and prostrate juniper.

Information for this Soil characteristic table was derived from a report by the U.S.D.A. Natural Resources Conservation Service NRCS Soil Interpretation Records in St. Paul as interpreted by the Clearwater County Soil and Water Conservation District staff, 1997.

Table 8. Itasca State Park Soil Characteristics (Continued)

Soil Number	Slope	Description	Surface Texture	Conifer Suitability	Septic Tank Absorption Fields	Sewage Lagoon Areas	Buildings*	Roads	Landscaping	Camp Areas	Picnic Areas	Playgrounds	Paths & Trails
820 B	1 - 8%	Potatolake very fine	Very Fine Sandy	Fair	S	S	S	S	M	M	M	S	S
867 B	1 - 8%	Graycalm - Menahga	Complex	Good	S	S	L	L	S	M	M	M	M
867 C	8 - 15%	Graycalm - Menahga	Complex	Fair	S	S	M	M	M	M	M	S	M
867 E	15 - 30%	Graycalm - Menahga	Complex	Good	S	S	S	S	S	S	S	S	M
1030	1 - 50%	Pits, gravel-Udipsamments complex	Complex	Poor	S	S	S	S	S	S	S	S	S
1113	0 - 1%	Haslie, Seelyeville, and Cathro soils, ponded	Muck	Very Poor	S	S	S	S	S	S	S	S	S
1129	0 - 2%	Lindaas sitly clay loam, morainic	Silty Clay Loam	Good	S	S	S	S	M	S	M	S	M
1136	0 - 1%	Nidaros muck	Muck	Poor	S	S	S	S	S	S	S	S	S
1138	0 - 3%	Rushlake and Handgaard soils, lake beaches	Lake Beaches	Good	S	S	M	M	S	M	M	M	M
1152 B	1 - 6%	Sugarbush loamy sand	Loamy Sand	Good	S	S	L	L	M	L	L	M	L
1164	1 - 3%	Zerkel loam	Loam	Good	S	S	M	S	L	L	L	M	L
1166 B	2 - 8%	Moosecreek fine sandy	Fine Sandy Loam	Good	S	S	L	M	M	M	M	M	L
1200	0 - 2%	Egglake loam	Loam	Good	S	S	S	S	S	S	S	S	S
1211	0 - 2%	Egglake - Cathro complex	Complex	Good	S	S	S	S	S	S	S	S	S
1225	1 - 3%	Wykeham - Karlstad complex	Complex	Fair	S	S	M	M	L	L	L	M	L
1230	0 - 1%	Haslie and Nidaros soils, ponded	Muck	Very Poor	S	S	S	S	S	S	S	S	S
1238 E	15 - 20%	Two Inlets - Sugarbush complex	Complex	Fair	S	S	S	S	S	S	S	S	M
1243 B	2 - 8%	Sol sandy loam	Sandy Loam	Good	M	S	M	M	M	L	L	M	L
1243 C	8 - 15%	Sol sandy loam	Sandy Loam	Good	M	S	M	M	M	M	M	S	L
1243 E	15 - 30%	Sol - sandy loam	Sandy Loam	Good	S	S	S	S	S	S	S	S	M
1244 B	2 - 8%	Sol - Sugarbush complex	Complex	Good	M	S	M	M	M	L	L	M	L
1244 C	8 - 15%	Sol - Sugarbush complex	Complex	Good	M	S	M	M	M	M	M	S	L
1244 E	15 - 30%	Sol - Sugarbush complex	Complex	Good	S	S	S	S	S	S	S	S	M
1244 F	30 - 45%	Sol - Sugarbush complex	Complex	Good	S	S	S	S	S	S	S	S	S
1294	1 - 3%	Nary fine sandy loam	Fine Sandy Loam	Good	S	S	M	M	M	L	L	M	L
1365	0 - 2%	Hillview fine sandy loam	Fine Sandy Loam	Fair	S	S	S	S	S	S	S	S	S
1421B	2 - 8%	Rockwood - Two Inlets, Morainic Complex	Complex	Good	S	M	M	M	M	M	M	M	M
1421C	8 - 15%	Rockwood - Two Inlets, Morainic Complex	Complex	Good	S	S	M	M	M	M	M	S	M
1421E	15 - 35%	Rockwood - Two Inlets, Morainic Complex	Complex	Fair	S	S	S	S	S	S	S	S	M
1439	0 - 1%	Cathro muck	Muck	Poor	S	S	S	S	S	S	S	S	S
1808	0 - 1%	Markey muck, ponded	Muck	Very Poor	S	S	S	S	S	S	S	S	S
1943	0 - 2%	Roscommon loamy sand	Loamy Sand	Poor	S	S	S	S	S	S	S	S	S

Chart Legend - Soils Suitability/Characteristics

L - (Low) Limitations for a stated use are minor and can be overcome easily.

M - (Moderate) Limitations for a stated use can be overcome by special planning, design, or intensive maintenance.

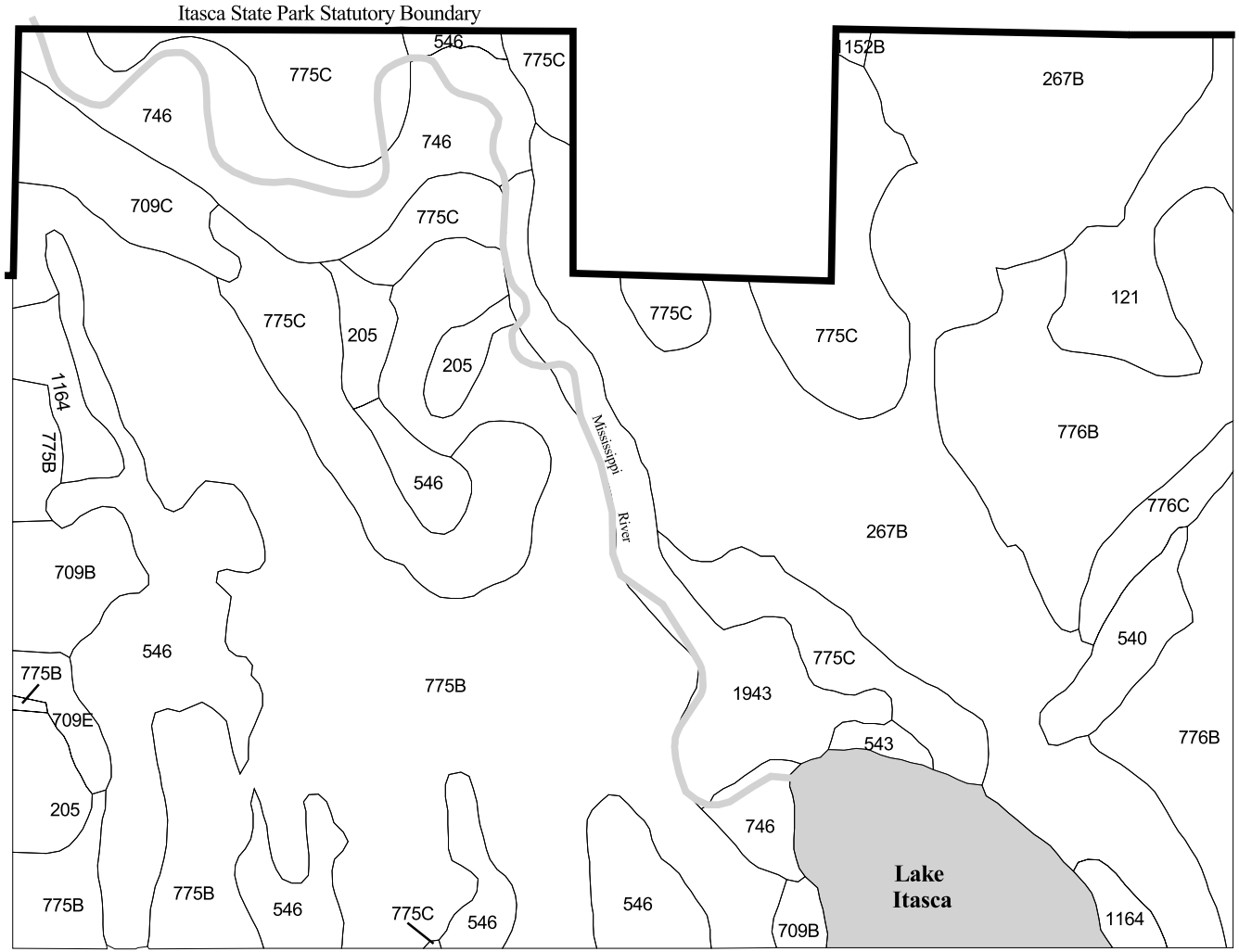
S - (Severe) Limitations for a stated use generally require a major soil reclamation, special design, or intensive maintenance.

*Based on buildings with a basement or foundation

Conifer Suitability - Ability of a soil type to support upland coniferous plants such as red, white and jack pine trees; and prostrate juniper.

Information for this Soil characteristic table was derived from a report by the U.S.D.A. Natural Resources Conservation Service NRCS Soil Interpretation Records in St. Paul as interpreted by the Clearwater County Soil and Water Conservation District staff, 1997.

Figure 7. Itasca State Park Soil Types Surrounding the Headwaters of the Mississippi River



Legend

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Soil Types

- 121 (Wykeham fine sandy loam)
- 205 (Karlstad sandy loam)
- 267B (Snellman sandy loam, 2 - 8 % slope)
- 540 (Seelyeville muck)
- 543 (Markey muck)
- 546 (Lupton muck)
- 709B (Lengby fine sandy loam, 2 - 8 % slope)
- 709C (Lengby fine sandy loam, 8 - 15 % slope)
- 709E (Lengby fine sandy loam, 15 - 30 % slope)
- 746 (Haslie muck)
- 775B (Sugarbush - Two Inlets complex, 1 - 8 % slope)
- 775C (Sugarbush - Two Inlets complex, 8 - 15 % slope)
- 776B (Snellman - Sugarbush complex, 2 - 8 % slope)
- 776C (Snellman - Sugarbush complex, 8 - 15% slope)
- 1152B (Sugarbush loamy sand, 1 - 6 % slope)
- 1164 (Zerkel loam)
- 1943 (Roscommon loamy sand)

Water

Mississippi River

500 0 500 1000 Feet

Source: USDA, Natural Resources Conservation Service, 1993

Pre-European Settlement Vegetation

Itasca State Park is located in the Pine Moraines and Outwash Plains Ecological Subsection as defined by the DNR Ecological Classification System Committee (Figure 1). Additional description of the Pine Moraines and Outwash Plains Subsection is found in the Beyond Park Boundaries chapter (Chapter 1). The vegetation cover within the park has changed over time as natural systems have evolved and humans have interacted with the natural systems. Like all forests, the park's forest communities are the result of complex interactions between the life histories of different tree species, shrubs and herbs, and the environment. The environment includes climate, soils, slope and aspect, plant competitors, insect outbreaks, diseases, herbivores, weather, aerial deposition, and fire. Although all of these factors are periodically present, none are constant. In addition these interactions occur on spatial scales that range from square inches to hundreds of square miles and time scales that range from hours to centuries.

BRW, Inc. (1995) analyzed the General Land Survey notes from the 1870s to identify the park's pre-European settlement vegetative cover types. The results of their analysis are displayed in Figure 8. During the pre-European settlement period, the park was strongly dominated by mixed pine and hardwood forests, including, white, jack, red pine, aspen, birch, and other hardwoods. These forests were dense in some portions of the park. The land survey notes also indicated that the timber quality was good and that open areas suitable for viewing the scenery were present in the forests. Although some single species stands existed, hardwoods were often mixed with conifers to create a mosaic of different species rather than large homogenous stands of a single species. Marsh and swamp areas supported tamarack, spruce, and fir.

Evidence of natural disturbances (fire and wind-felled trees) were also documented in the land survey. Such disturbances played an important role in maintaining healthy natural communities within the park. Frissell (1973) found that during the period between 1650 and 1922, fire occurred in the park about every 8 years on the average. Major fires occurred about every 10 years and any particular area of the park was likely to burn every 22 years on average. Most of these fires were started by lightning strikes or windblown prairie fires moving through the area. Indian activity was another cause of fire during the pre-European settlement period. They used fire as a tool to improve berry production and game habitat, and to clear brush for improved hunting (Stewart, 1956). Indian communities also stored cooking or heating fire in smoldering coals or peat until their return from hunting or trapping. These stored fires occasionally escaped and developed into major conflagrations (Frissell, 1973).

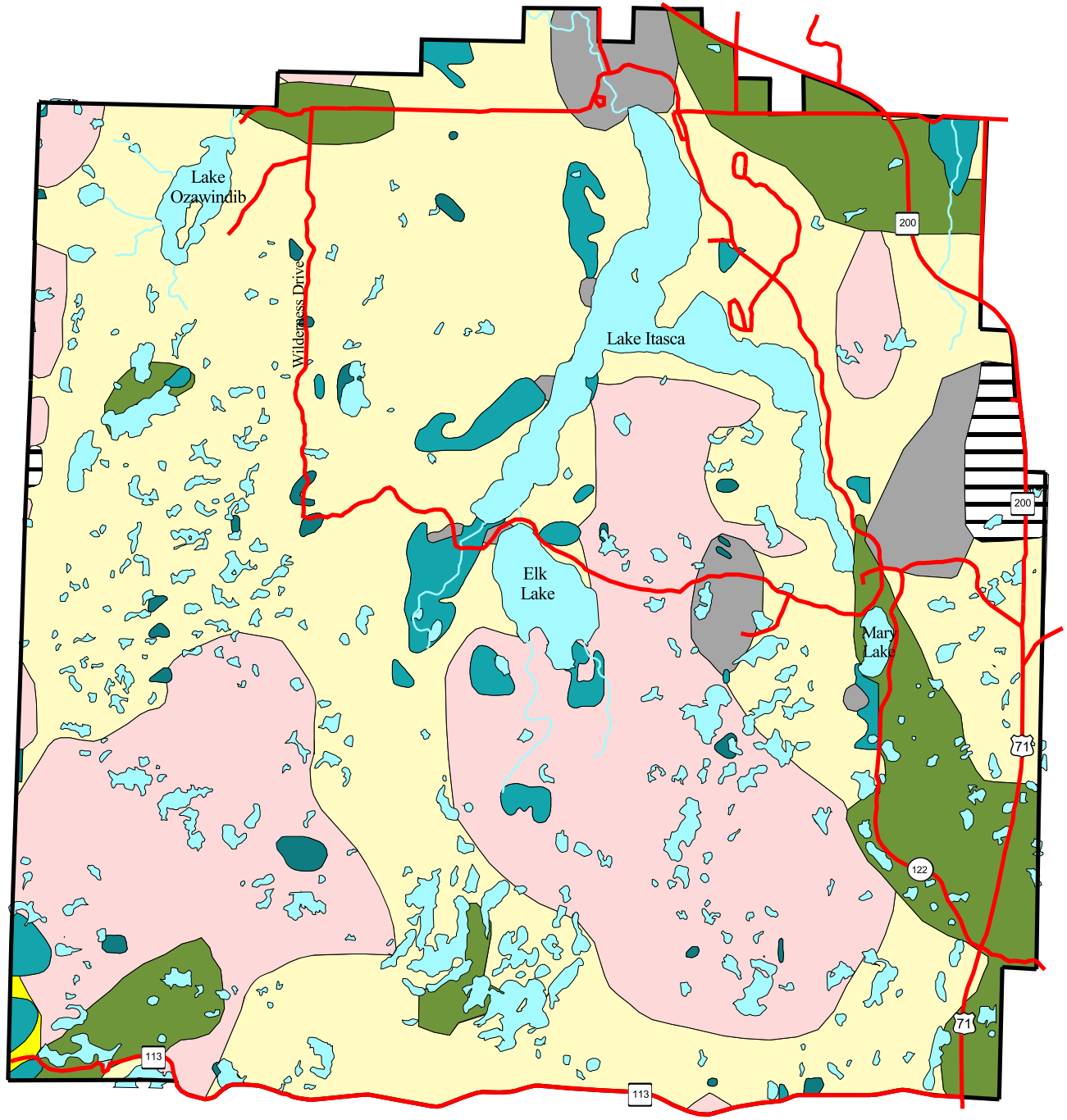


Figure 8. Itasca State Park Pre-European Settlement Vegetation

Legend

N

Pre-European Settlement Vegetation in Itasca State Park

- Aspen/Birch
- Burned
- Dead/Fallen Timber
- Marsh
- Mixed Pine/Hardwoods
- Swamp
- White Pines/Hardwoods
- Young Yellow Pine

- Roads
- Itasca Statutory Park Boundary
- Lakes & Streams

0.5 0 0.5 1 Mile

Source: BRW Inc., 1995

Existing Vegetation

Although vegetation naturally changes over time, Itasca State Park continues to contain significant forest resources whose protection and management is very important to the park's ecological integrity and to the protection of Minnesota's natural heritage. Natural changes occur in vegetative types as a result of disturbances, climate, animal populations, weather, and succession. In addition, three major factors have significantly influenced the vegetation found within Itasca State Park today. These were (a) suppression of wild fires; (b) logging and settlement activities; and (c) growth of the park's white-tailed deer population.

Fires occurred in the park with regularity until the early 1920s. Fire suppression activities have eliminated wildfires in the park since this time. Logging primarily occurred in the western portion of the park during the late 1800s and early 1900s and ended about 1920 (Minnesota Department of Natural Resources and the University of Minnesota, 1994). The westernmost mile of the park was eventually logged before logging operations ceased. The logging operations removed most of the large pine forests found in that portion of the park. Much of the logging occurred before the land became part of the park, but the effects of these operations are visible in the current vegetative cover types. A pioneer forest composed primarily of quaking and bigtoothed aspen replaced the pine forest in the logged areas.

The elimination of fire and increased white-tailed deer populations have also been contributing factors to the lack of white, red and jack pine regeneration in the park. Fire is important to natural pine regeneration because it enables early successional pine species to seed themselves, and it opens the forest floor and canopy for new trees to grow. Pine regeneration is affected by larger than optimal deer populations because deer browse on young pine seedlings and either stunt or completely prevent growth of the seedlings into mature trees.

As a result of logging, fire suppression, deer population growth and other factors, few new stands of pine have grown to replace mature pines as they are lost through disease, windstorms, and old age (Minnesota Department of Natural Resources and the University of Minnesota, 1994). Park staff has contracted with MNDNR, Division of Forestry to document the park's existing vegetative cover types through interpretation of aerial photographs. Preliminary results of this project are displayed in Figure 9. Although a variety of forest communities currently exist, the four most dominant are aspen-birch, red pine, white pine, and northern hardwoods (Figure 9). Other forest communities such as lowland conifers are also found within the park. A brief description of each of these major communities follows.

Aspen - Birch Forest

Quaking aspen, bigtooth aspen and paper birch are the dominant species in this community's canopy. The tall-shrub layer of the community is usually dense and typically consists of beaked hazel, mountain maple, and saplings of late-successional tree species. The ground layer tends to be very diverse in this community (MNDNR, Natural Heritage Program, 1993). This type of forest is

an early successional hardwood forest that grew in the park following catastrophic disturbances such as fire, weather events, and logging. This community is found primarily in upland areas that were once dominated by conifer-hardwood forests. Major portions of the park that were once dominated by pines and mixed hardwood forests are now dominated by aspen-birch communities that grew in logged areas. Aspen is arguably the dominant species in the park today.

Red Pine Forest

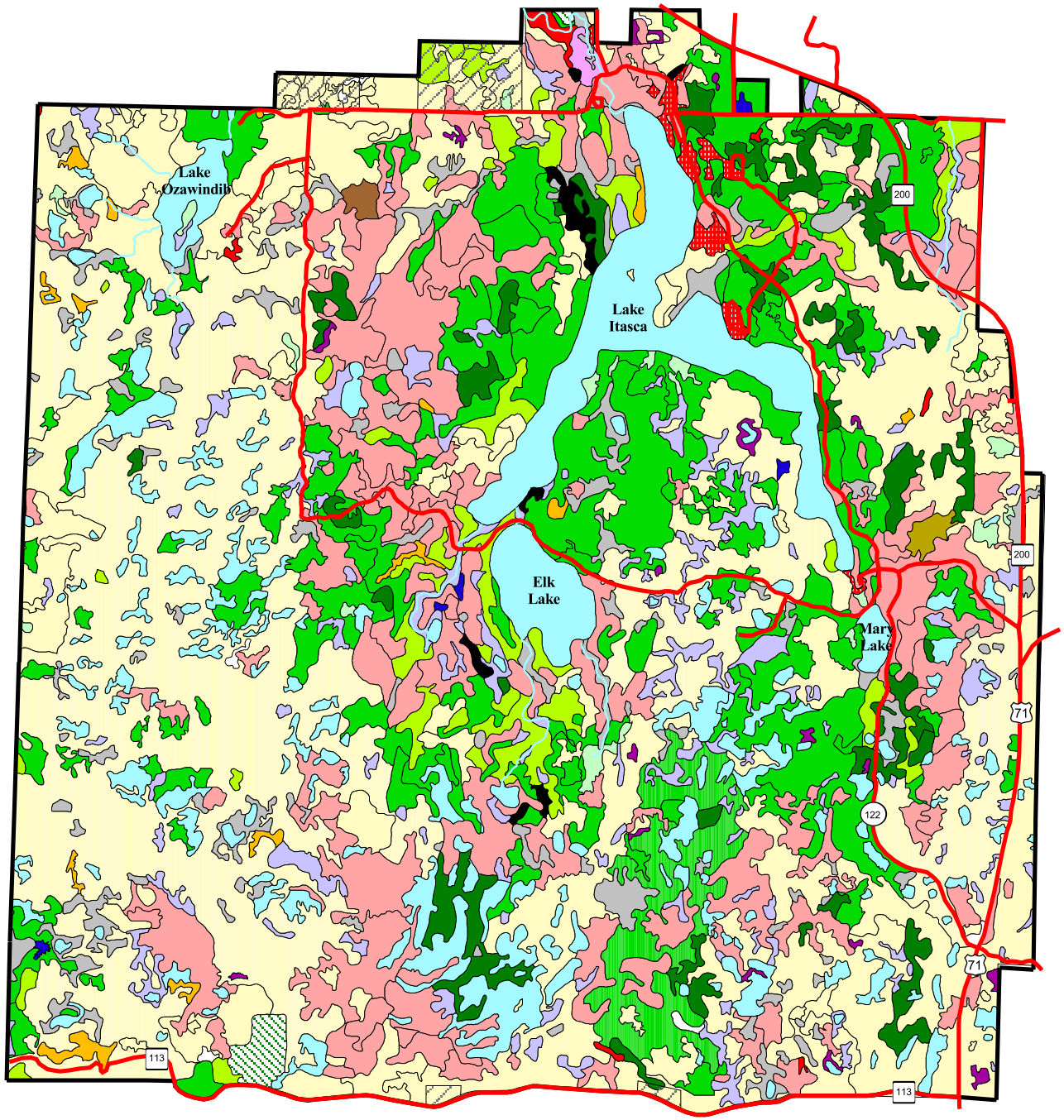
This forest community is dominated by red pine trees within the canopy and often contain jack pine on dry sites and white pines, white spruces, or balsam firs on mesic sites. Hardwoods such as paper birches, red oaks, red maples, and quaking aspen sometimes form a subcanopy beneath the pine canopy in this forest community. The tall-shrub layer of this community is usually scattered and composed mostly of beaked hazel. Forest herbs and feathermosses typically form the ground layer in red pine forest communities. Red pine forests are fire-maintained communities. Ground fires keep the understory open and expose mineral soils for seed germination and maturation of the dominant red pine trees. As a result of years of fire suppression, Minnesota's red pine forest communities have become brushier and have succeeded to forest communities dominated by mesic hardwoods and white pine (MNDNR, Natural Heritage Program, 1993). Although fire is being reintroduced to Itasca's forests in the form of prescribed burns, because it is the one natural disturbance that humans can partially control, the effects of years of fire suppression on the forest communities remain and will so for a long time into the future.

White Pine Forest

This forest community is dominated by white pines within the canopy and often are mixed with red pines and hardwoods, especially paper birches. Balsam fir, white spruce, sugar maple, northern red oak, red maple, and ironwood are often found in the understory of white pine forests. This community usually has a moderately developed tall-shrub layer composed of species like bush honeysuckle, beaked hazel, mountain maple, round-leaved dogwood, and downy arrowwood. White pine forests are usually found on dry-mesic sites and originate following a fire, although natural fires tend to be less frequent and less intense in white pine forests than in red pine forests partially because white pine sites tend to be more moist than red pine sites. If fire is absent from the system for a long period of time, hardwoods and other conifer species will increase in numbers and eventually dominate the understory. Although white pine is an early successional species, the community can last a long time because individual trees may live for several hundred years and can replace themselves through natural reproduction given the right conditions (MNDNR, Natural Heritage Program, 1993).

The red and white pine forests that remain in Itasca State Park are very old. Very little natural pine regeneration is occurring within the park. Several planting efforts have occurred in recent years to aid in pine regeneration but an over abundance of white-tailed deer, timing of tree planting, and weather conditions following tree planting have all hampered these activities. The largest concentrations of white and red pine stands within the park now exist in the central portion of the

Figure 9. Itasca State Park Current Forest Cover Types



Legend

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Current Cover Types in Itasca State Park

- Ash
- Aspen
- Balsam Fir
- Black Spruce Lowland
- Bog
- Cutover Area
- Former Agricultural Land
- Jack Pine
- Lakes
- Lowland Brush
- Lowland Grass
- Lowland Hardwoods
- Marsh
- Northern Hardwoods
- Norway Pine
- Recreation Development
- Tamarack
- Upland Brush
- Upland Grass
- White Pine
- White Spruce

- Private and County Ownership
- Roads
- Itasca State Park Statutory Boundary

0.5 0 0.5 1 Mile

Source: BRW, Inc. & Minnesota DNR Forestry, 1998

park with some large stands in the eastern section of the park. Many of these trees are in excess of 200 years old and thus susceptible to high mortality rates. Major windstorm events in recent years have downed several hundred acres of pine and hardwood trees, stressed many of the remaining pine and hardwood trees and caused major infestations of insects such as the pine bark beetle.

Northern Hardwood Forest

This forest community is dominated by dry-mesic to mesic hardwoods especially sugar maple and basswood. Northern red oak is sometimes codominant in the canopy on drier sites and black ash or American elm may be codominant on wetter sites. This forest community often has a significant conifer component that includes white pine, balsam fir, white spruce, and white cedar. The multilayered and patchy understory characteristic of this forest community usually consists of shrubs and seedlings and saplings of the dominant trees. Some of the shrubs commonly present are fly honeysuckle, beaked hazel, leatherwood, mountain maple, chokecherry, and red-berried elder (MNDNR, Natural Heritage Program, 1993).

This forest community was present in Itasca State Park prior to European settlement of the area in pocketed areas that were protected from fire and other disturbances. Because this community existed in these pocketed areas, it often succeeded red and white pine stands that were logged.

Other Forest Communities

In addition to the four dominant forest communities, several other forest communities exist in Itasca State Park (Figure 9). Pockets of jack pine also exist in the park. However, fire suppression has significantly reduced the number of jack pine stands. Tamarack, spruce and balsam fir continue to dominate the lowland areas.

Old-Growth Forests

Itasca State Park was created in 1891 in large part to preserve and perpetuate the old-growth pine forest ecosystem that existed in the park. Although Itasca's 32,000 acres can only provide a microcosm of the large pine ecosystems that once dominated northern Minnesota, the park offers the unique opportunity to preserve representations of that ecosystem. Some of the largest contiguous stands of old-growth white and red pines on Minnesota's public lands are within the park's boundary, making the park arguably the last best chance to preserve some of Minnesota's pre-European settlement pine ecosystem. Many other stands are being considered as potential candidates for future old-growth designation (relatively undisturbed stands of natural origin within a landscape that are not yet be old enough to be considered old-growth). Among the characteristics that distinguish old-growth forests from non-old-growth forests are the presence of standing dead trees, logs in various states of decay, and complex understory communities of shrubs, herbs, and saplings.

The old-growth delineation process is currently underway for Itasca in cooperation with the Minnesota Department of Natural Resources, Division of Forestry. Old-growth stands within the park have been identified through interpretation of aerial photographs. Although it is expected that this delineation work will be completed in the near future, Figure 10 displays preliminary results from this project and identifies current old-growth, potential old-growth, and non-candidate old-growth stands within the park.

MNDNR's Old-Growth Forests Guideline states that stands designated as old-growth candidates are to be protected from future harvest, salvage, or timber stand improvements aimed at timber production. Important to the old-growth guidelines is the concept that evidence of human impacts on the stands will be minimal. Such stands will also be protected from use of chemicals except when necessary to protect them from exotic threats. In addition, new trail and road construction is not permitted for designated old-growth stands (Minnesota Department of Natural Resources, 1994). The guidelines consider use of fire to be an acceptable management technique in old-growth forests. The specific criteria used for designation of old-growth stands and additional recommendations for old-growth management are found in the MNDNR's Old-Growth Forests Guideline.

Many other conifer and hardwood stands within the park that may not meet the MNDNR's criteria for old-growth designation are reaching the age where they are developing characteristics that typify older forests. Changes in current species composition for these stands will also continue to occur over the next few years as the older trees are replaced by the next generation of growth. The specific changes depend on the specific tree species present in the stand, the extent of disturbances that might cause loss of trees, and the extent to which older trees die.

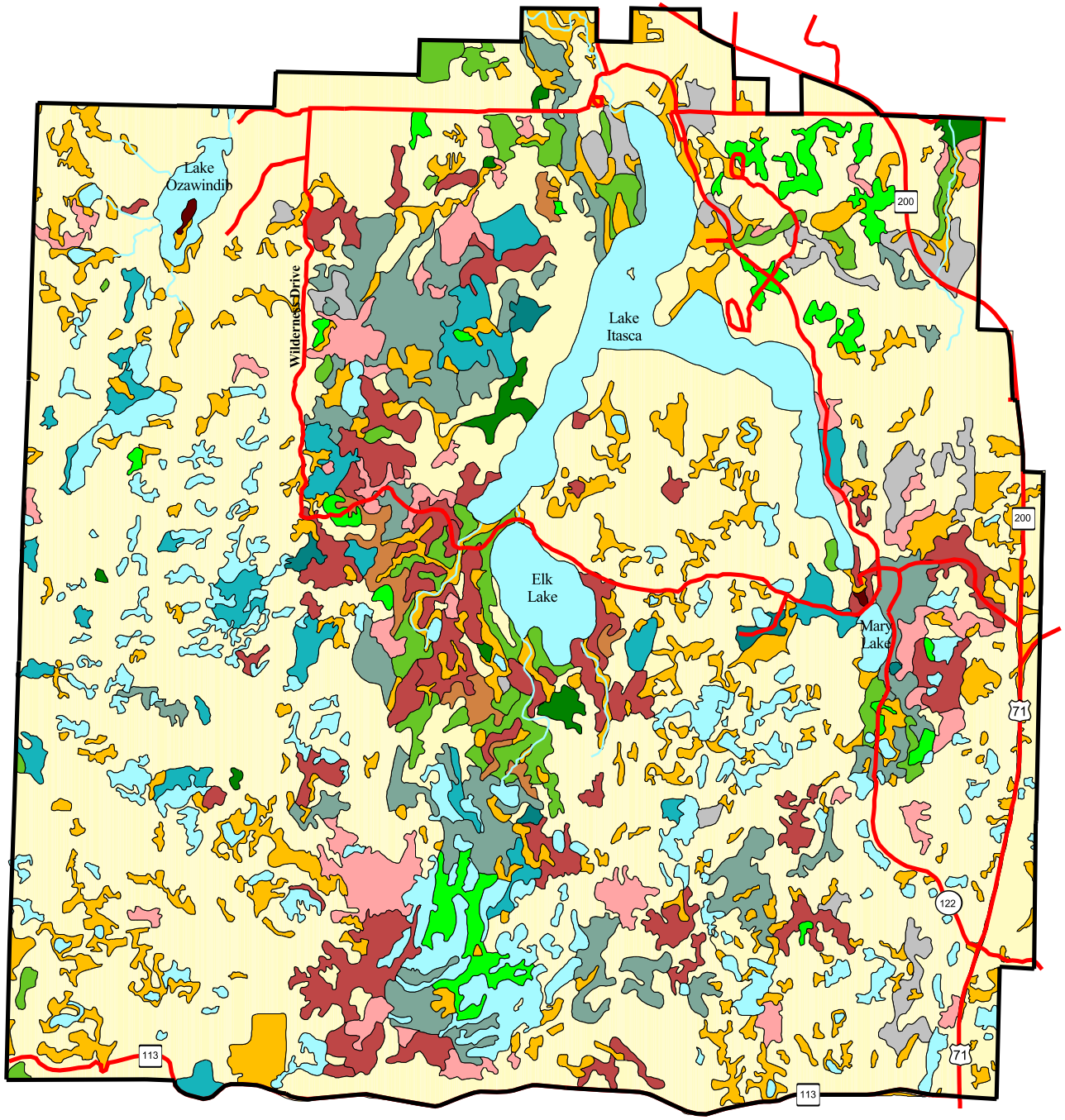
Fire Management

Fire has historically played in important role in forest ecosystem health. Wildfires were a natural occurrence in northern Minnesota's pine forests prior to European settlement. These fires reduced the amount of forest floor litter, aided in germination of some forest species, and opened the forest canopy so younger trees could grow to replace older trees as they were removed from the canopy by disease, fire, windstorms, drought, cold weather, insect infestations, fire and other natural disturbances. When Itasca State Park was created, managers followed appropriate management techniques of their time and excluded fires, logging, hunting, and other land clearing practices within the park to preserve and protect the old-growth pine forest ecosystem in existence at the time.

The removal of fire from the ecosystem set the park up for potentially catastrophic fires with the likely loss of much of the pine component and its associated species, and for succession to a hardwood dominated system. At the same time, increased human activity and conversion of forests to other land uses in the area surrounding the park made the park an isolated relict of the contiguous forest ecosystem that once existed in the area.

Over time, managers have recognized the need to reintroduce understory fires to Itasca State Park to aid in restoration of the park's pine forest ecosystem to a more natural and healthy system. Today,

Figure 10. Itasca State Park Old Growth Forest Stands



Legend

Old Growth Stands in Itasca State Park

- Lowland conifer old growth stand
- Lowland hardwood old growth stand
- Mixed pine old growth stand
- Red pine old growth stand
- Upland hardwood old growth stand
- White pine old growth stand

Potential Old Growth Stands in Itasca State Park

- Lowland conifer potential old growth stand
- Lowland hardwood potential old growth stand
- Mixed pine potential old growth stand
- Red pine potential old growth stand
- Upland hardwood potential old growth stand

- Itasca State Park Statutory Boundary
- Roads
- Lakes & Streams
- Non-forest
- Non-old growth forest stand

N

0.5 0 0.5 1 Mile

Source: BRW & Minnesota DNR Forestry, 1998

fire management at Itasca State Park involves two major processes; (a) suppression of wildfire and (b) use of prescribed burns to aid in forest management. A fire protection plan was developed for Itasca State Park in 1990 to (a) provide for public safety, (b) minimize wildfire within the park boundaries, (c) minimize loss of facilities and (d) maximize the efficient use of fire suppression resources within the Divisions of Park and Recreation and Forestry (MNDNR, 1990). This plan was developed because Itasca is considered one of the most significant natural resource features in Minnesota and it's protection is, therefore of paramount concern. Wildfire is suppressed in cooperation with the MNDNR, Division of Forestry and other fire fighting resources in areas of the park that contain visitor facilities, buildings, important historic sites, and critical species habitats.

In recent years, the Division of Parks and Recreation has increasingly used prescribed burning at Itasca State Park to aid in forest management activities such as pine regeneration, reduction of dry fuel loads, management of the effects of wind disturbances, and reduction of understory density. Reduction of dry fuel loads and understory density reduces the chance of catastrophic wildfires and increases the probability of successful pine regeneration. Specific sites are selected and annual prescribed burn plans are developed for those areas to be burned. Prescribed burns are administered in cooperation with the MNDNR, Division of Forestry, the MNDNR, Division of Fish and Wildlife and local fire fighting officials. Fire has become a major component of the forest management activities conducted in the park and is expected to grow in size and scope in the coming years.

Wildlife

Itasca State Park provides habitat for a variety of plant and animal species. Many species make the park their permanent homes and others are only seasonal inhabitants. A variety of plant and animal species such as songbirds, deer, gray wolves, birds of prey, and black bears live within the park's forests. Brief discussions of some of the park's wildlife species follow. Comprehensive surveys of the park's flora and fauna have not been completed, so the following discussions are general.

Mammals

A wide variety of mammals live in Itasca, ranging in size from tiny insect-eating shrews to large carnivores and herbivores such as wolves, black bears, white-tailed deer and moose. No exotic mammals are known to exist within the park in any significant numbers. Although a complete inventory of mammals present in the park has not been completed, Sargent and Marshall (1959) compiled a list of over 60 mammals known to exist in the park. Table 9 presents the families of mammals that they documented. Lists of specific species within each family that have been sighted in the park are available from Itasca State Park staff. Among the mammals found in the park, white-tailed deer and beaver have required special management attention in the past and are expected to continue to be of management concern in the future.

Table 9. Families of Mammals within Itasca State Park[1]

-Shrews (Family Soricidae)	-Porcupines (Family Erethizontidae)
-Moles (Family Talpidae)	-Foxes and Wolves (Family Canidae)
-Bats (Family Vespertilionidae)	-Bear (Family Ursidae)
-Hares and Rabbits (Family Leporidae)	-Raccoons (Family Procyonidae)
-Squirrels (Family Sciuridae)	-Weasel-like mammals (Family Mustelidae)
-Pocket Gopher (Family Geomyidae)	-Cats (Family Felidae)
-Beaver (Family Castoridae)	-Deer and Moose (Family Cervidae)
-Rats and Mice, N.W. (Family Cricetinae)	
-Rats and Mice, O.W. (Family Muridae)	
-Jumping Mice (Family Zapodidae)	

[1]Source: Sargent, A. B. and Marshall, W. H. (1959). Mammals of Itasca State Park. Flicker 31: 116 - 128.

White-tailed deer

White-tailed deer are common throughout most of Minnesota, including the area surrounding Itasca State Park. Population estimates based on 1998 harvest figures place deer population density in Itasca State Park at approximately 15 - 17 animals per square mile during the pre-fawn time of the year. In contrast, the estimated pre-European settlement deer population density for similar forested areas in northern Wisconsin was approximately 4 - 10 animals per square mile (Tester and Kenyon, 1994). The park's deer population experienced dramatic increases during the 1930s and 1940s as improved transportation systems brought increased human activity to the area. Increased human activity that created additional open spaces also increased deer habitat in the area surrounding the park. In addition, the park was designated as a deer protection zone where no hunting was allowed from the early 1900s until the 1940s. Annual deer hunts have been held within the park since the 1940s to reduce the population density. These hunts have aided in deer management, but the park's white-tailed deer population remains higher than the desired density for optimal pine regeneration to occur in Itasca's northern coniferous forest (University of Minnesota and Minnesota Department of Natural Resources, 1994).

Beaver

Beaver are also abundant in Itasca State Park. Although exact beaver counts are not available, evidence of their activity is readily observable throughout the park. A native species to northwestern Minnesota, the beaver had been trapped and nearly extirpated in this part of the state by the late 1800s. Beaver were reintroduced into the park in the early 1900s following a gift of beaver to the Governor of Minnesota. Since that time, the park's many streams, lakes, ponds, and forest communities have provided habitat for a growing beaver population. The current beaver population fluctuates between 600 - 1000 animals. Beaver have historically constructed dams on the park's lakes and streams creating highly productive ponds and locations for peat deposits. Beaver use trees

from the park's forest communities as both food and construction material for their lodges. Beaver activity has also caused flooding, redirection of stream flows, and infrastructure damage in some locations.

Birds

Birds are a major component of the biological diversity in northwestern Minnesota. The U.S. Fish and Wildlife Service research on bird species has documented that Minnesota is in the middle of a region that spans from the Adirondack Mountains in New York, across the upper Great Lakes and into the prairie provinces of Canada that supports the highest richness of bird species north of Mexico (Green, 1995). Over 200 bird species have been reported within Itasca State Park (Parmelee, 1977; and Thoma, Warner, and Anderson, 1989). Table 10 presents the families of birds known to exist within the park. A list of the individual species found within the park is available from Itasca State Park staff. Not all of the bird species that have been seen in the park actually breed within the park, but several species of nesting birds have been reported in the park. Other species are neo-tropical migratory birds that breed in the park. The species diversity found in the park and the importance that this portion of Minnesota plays nationally for bird habitat makes bird habitat conservation at Itasca important.

Birds play an important role in maintaining the health of forest ecosystems, although the specifics of that role are still being discovered. For example, forest songbirds have been shown to help control some insect infestations that afflict tree species. Birds are also important parts of the food webs as both predators and prey. Among the birds for which there is the most conservation concern are those that rely on large blocks of mature forest habitat and those that require features of older forests, such as hollow trees. Many of these bird species are unequipped to deal with the nest predators and brood parasites that move into an area when large forest habitats are broken into smaller blocks. While much research is still needed on the specifics of how large blocks of forest need to be to ensure the continued presence of various birds, it is clear that Itasca provides important habitat for forest birds.

Reptiles and Amphibians

A comprehensive survey of reptiles and amphibians has not been completed for the park, but Lang and Marshall (1968) developed a list of reptile and amphibian species that have been sighted in the park (Table 11). These species include various turtles, salamanders, skinks, snakes, toads, and frogs.

Table 10. Families of Birds within Itasca State Park[1]

-Loons (Family Gaviidae)
-Thrushes (Family Turdidae)
-Grebes (Family Podicipedidae)
-Cormorants (Family Phalacrocoracidae)
-Herons and Bitterns (Family Ardeidae)
-Swans, Geese and Ducks (Family Anatidae)
-American Vultures (Family Cathartidae)
-Hawks and Eagles (Family Accipitridae)
-Ospreys (Family Pandionidae)
-Falcons (Family Falconidae)
-Grouse (Family Tetraonidae)
-Cranes (Family Gruidae)
-Rails and Coots (Family Rallidae)
-Plovers (Family Charadriidae)
-Sandpipers (Family Scolopacidae)
-Gulls and Terns (Family Laridae)
-Pigeons and Doves (Family Columbidae)
-Cuckoos (Family Cuculidae)
-Owls (Family Strigidae)
-Whip-poor-wills and Nighthawks (Family Caprimulgidae)
-Swifts (Family Apodidae)
-Hummingbirds (Family Trochilidae)
-Kingfishers (Family Alcedinidae)
-Woodpeckers (Family Picidae)
-Tyrant Flycatchers (Family Tyrannidae)
-Larks (Family Alaudidae)
-Swallows (Family Hirundinidae)
-Jays, Magpies, Ravens and Crows (Family Corvidae)
-Titmice (Family Paridae)
-Nuthatches (Family Sittidae)
-Creepers (Family Certhiidae)
-Wrens (Family Troglodytidae)
-Mimic Thrushes (Family Mimidae)
-Thrushes (Family Turdidae)
-Gnatcatchers and Kinglets (Family Sylviidae)
-Waxwings (Family Bombycillidae)
-Shrikes (Family Laniidae)
-Starlings (Family Sturnidae)
-Vireos (Family Vireonidae)
-American Wood Warblers (Family Parulidae)
-Weaver Finches (Family Ploceidae)
-Bobolinks, Meadowlarks, Blackbirds and Orioles (Family Icteridae)
-Tanagers (Family Thraupidae)
-Buntings, Finches, Sparrows, etc. (Family Fringillidae)

[1]Adapted from: Parmelee, D. F (1977) Annotated checklist of the birds of Itasca State Park and surrounding areas. St. Paul: University of Minnesota and Thoma, B., Warner, D., and Anderson B (1989). The birdlife of Itasca State Park. St. Paul: Minnesota Department of Natural Resources.

Table 11. Reptiles and Amphibians of Itasca State Park[1]

-Western Painted Turtle (*Chrysemys picta belli*)
-Black-band Skink (*Eumeces S. septentrionalis*)
-Red-bellied Snake (*Storeria occipitomaculata*)
-Common Garter Snake (*Thamnophis s. sirtalis*)
-Red-sided Garter Snake (*Thamnophis s. parietalis)*
- Smooth green Snake (*Opheodrys v. vernalis*)
-Blue-spotted Salamander (*Ambystoma laterale*)
-Tiger Salamander (*Ambystoma t. tigrinum*)
-Rough-skinned Central Newt (*Diemictylus viridescens louisianensis*)
-American Toad (*Bufo a. americanus*)
-Spring Peeper (*Hyla c. crucifer*)
-Common Tree Frog (*Hyla v. versicolor*)
-Boreal Chorus Frog (*Pseudacris t. triseriata*)
-Green Frog (*Rana clamitans melanota*)
-Leopard Frog (*Rana p. pipiens*)
-Mink Frog (*Rana spetentrionalis*)
-Wood Frog (*Rana sylvatica*)
-Snapping Turtle *(Chelydra serpentina)*

[1]Source: Lang, J. and Marshall, W. H. (1968). The amphibians and reptiles of Itasca State Park.

Waters/Fisheries

Water Resources

Itasca State Park rests above deep aquifers formed by glacial activity and contains over 2,200 acres of surface water in the form of lakes, streams, and wetlands. Over 100 lakes are entirely within the boundaries of the park. The Headwaters of the Mississippi River is also found within the park. The Lake Itasca Drainage Basin that flows into the Mississippi River Major Watershed is almost entirely within the boundary of Itasca State Park (Figure 11). These waters support a variety of aquatic species including plants, animals, reptiles, and amphibians and support the park's wetland communities. Given this breadth of significant water resources, protection and management of the park's water resources is very important to the park's ecological integrity and to the protection of Minnesota's natural heritage. Research work on the water resources in the Itasca area continues to be conducted. The National Wetland Inventory has been completed and the Board of Water Resources and other agencies are currently involved in a project to assess the value and hydrologic functions of the Itasca area's wetlands.

Groundwater

Water for human consumption in the Itasca area is drawn primarily from artesian aquifers two to fifty feet thick formed by glacial drift or glacial outwash. The glacial drift consists of loamy glacial till located 400 to 450 feet deep in this area. Much of the groundwater from the Itasca area aquifers has a high content of dissolved minerals that come mainly from calcium and magnesium carbonates. Some wells also have a high concentration of iron and manganese. The primary source of aquifer recharge in this area is precipitation.

Several wells exist within Itasca to provide water for human use. Water quality from these wells is adequate for drinking water. Some of the wells produce water with high concentrations of iron that create some maintenance challenges. Some of the older and less productive wells have also been abandoned over time. Abandoned wells within the park are being inventoried and sealed to prevent groundwater contamination in accordance with MNDNR and Minnesota Pollution Control Agency (MPCA) policy governing the sealing of abandoned wells.

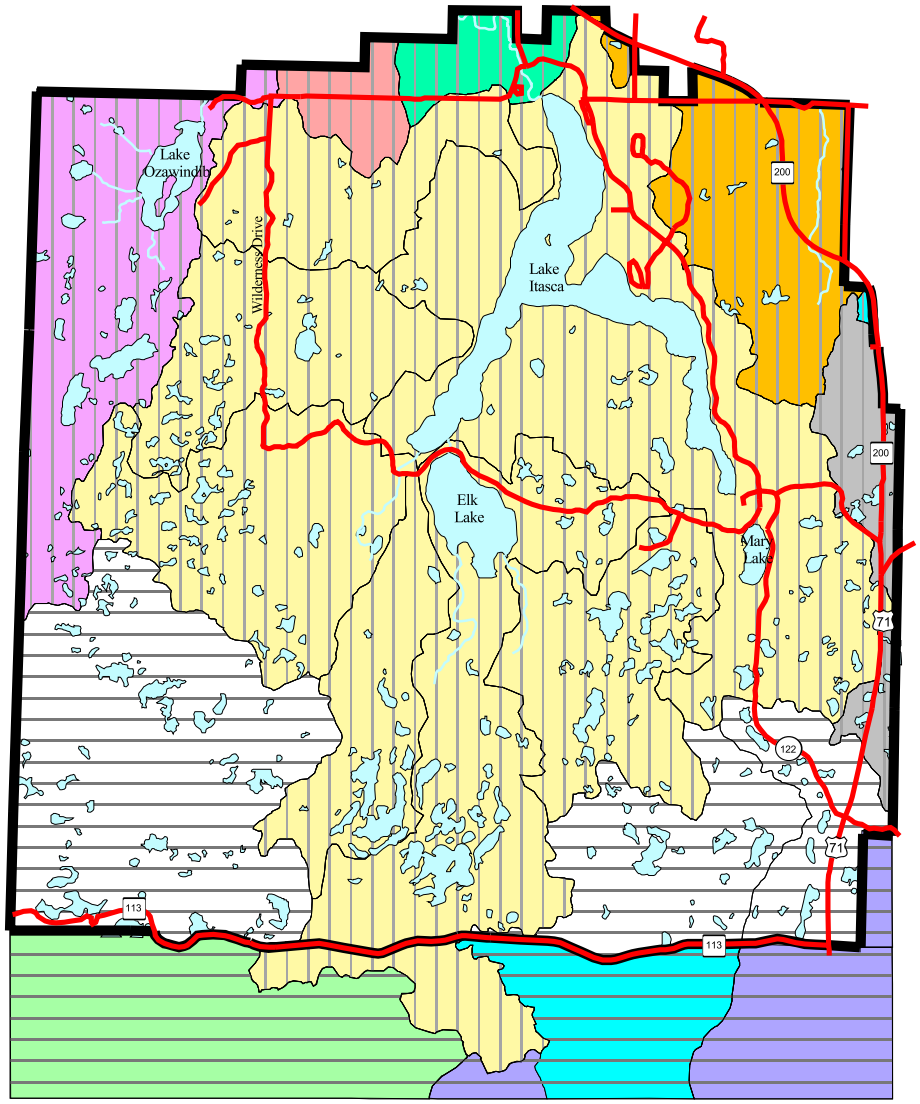
Surface Water

Itasca's surface water resources contain many lakes, streams, and wetlands. Many of the lakes in the park are ice block lakes that were formed when blocks of ice left by retreating glaciers melted. Others are tunnel valley lakes also formed by retreating glaciers. Lake Itasca is the largest body of water in the park with approximately 1,100 acres of surface water area, a maximum depth of 40 feet and an average depth of 14 feet. The northern outlet of this lake is the Headwaters of the Mississippi River. Other major bodies of water in terms of surface area include Elk, Ozawindib, Morrison, DeSoto, and Mary Lakes. Several small lakes (i.e., Deming, Josephine, and Arco) are among the deepest in the park.

Most of the park is within the Lake Itasca Drainage Basin (Figure 11). This basin is almost entirely within the park boundary. Only the basin's most southern tip is outside the park boundary and south of Trunk Highway 113. The Lake Itasca Drainage Basin flows into the Mississippi River Headwaters Major Watershed (Figure 11). The basin includes the park's four major lakes, the portion of the Mississippi River found within the park, and most of the park's other lakes except for those in the extreme southwestern and southeastern corners of the park. The extreme southwestern and southeastern corners of the park are within the northernmost portion of the Crow Wing Major Watershed (Figure 11). Water within the Crow Wing Major Watershed flows south into the Crow Wing River. Water quality in the park's lakes is generally good largely because there is no significant residential, agricultural or industrial development along the park's lakeshores to produce major runoff. In addition, water quality remains good because surface water generally flows away from the park and not into it. However, recent water quality testing conducted by Itasca State Park resource management staff and trained volunteers in cooperation with the University of Minnesota in Lake Itasca has indicated a deterioration in water clarity whose cause is not completely understood.

Natural and human events have occurred over time to alter the conditions in the park's water bodies. Beaver activity has been one of the more important natural events to influence current water conditions. Beaver periodically construct dams at or below lake outlets and in streams. Beaver dams typically change the course of water flow and water depths. In addition, human activities within the park have effected aquatic ecosystems. Construction of roads, trails, and other facilities has increased runoff and sedimentation in some of the park's lakes. Motorized recreation on the four largest lakes also affects the water quality within these lakes. In addition, consumptive fishing influences the ability of the park's lakes to naturally maintain healthy aquatic systems reflective of their pre-European settlement condition. Dams constructed at the outlets of Lake Itasca, Elk Lake and Lake Ozawindib have affected conditions of the aquatic systems of these lakes and connected streams.

Figure 11. Itasca State Park Major & Minor Watersheds



Legend

N

Major Watersheds in Itasca State Park

- Mississippi River Headwaters Major Watershed
- Crow Wing Major Watershed

Minor Watersheds in Mississippi River Headwaters Major Watershed

- Gould Creek
- Lake Itasca Drainage Basin
- La Salle Creek
- Lake Alice Creek
- Mississippi River
- Sucker Creek
- Unknown Name

Minor Watersheds in Crow Wing River Major Watershed

- Basswood Creek
- Dinner Creek
- Unknown Name

- Itasca State Park Boundary
- Roads
- Lakes and Streams

0.5 0 0.5 1 Mile

Source: DNR Division of Waters and DNR Division of Parks and Recreation, 1995

Human constructed dams have existed in some form at the outlet of Lake Itasca since the logging operations of the early 1900s and at the outlet of Elk Lake since the 1930s. Loggers constructed a dam at the outlet of Lake Itasca to aid in movement of logs cut from the park to mills downstream along the Mississippi. The Civilian Conservation Corps (CCC) constructed dams at the Lake Itasca and Elk Lake outlets in the 1930s. The Headwaters Dam is located at Lake Itasca's outlet and was constructed in the 1930s to provide visitors with a more "aesthetically pleasing" view of the Mississippi Headwaters than was available at the time. To accomplish this, an earthen dike and concrete dam were constructed across the outlet. The concrete structure is referred to as the Headwaters Dam. The Headwaters Dam raised the lake level of Lake Itasca by about a foot. The Headwaters Dam has been periodically modified and repaired since its initial construction but the original CCC foundation remains in place. In recent years, natural water movement had eroded portions of the earthen dike and begun to open a channel to the Mississippi River. The dike was repaired in fall, 1998 and the channel was closed.

The 1935 Elk Lake dam was replaced with a more permanent structure in 1938 by CCC crews and again replaced with the current structure in 1967. In response to droughts in the late 1930s, the 1938 dam was constructed to supplement the flow of water over the Headwaters of the Mississippi during periods of low water. Although water flows between the two lakes via Chambers Creek were not sufficient to effectively accomplish this purpose, a dam at Elk Lake has remained. Only minor repairs have been made on the current dam since it's 1967 construction. In recent years, age and deterioration have caused water movement under and around the dam. This water movement has caused the road bed to settle where it meets the bridge over Chambers Creek. The top boards on the dam were removed in 1992 to slow the erosion process and keep the road open. This action temporarily decreased water pressure against the dam, reduced the threat to the bridge and road, and lowered Elk Lake's water level by approximately 18 inches until a decision could be reached regarding dam repair, replacement, or removal.

In June of 1998, a decision was reached to reconstruct the Elk Lake dam. The design would use sheet piling to resolve the seepage problems under and around the old structure with a rock covering to give it a more natural appearance. The fixed crest structure would be installed in a run out elevation to maintain Elk Lake at levels similar to those prior to the 1992 drawdown.

Fisheries

At least 45 species of fish, belonging to 11 families were documented in Itasca State Park's lakes and streams in the mid-1960s (Underhill and Dobie, 1965). Many of these species are currently found in the park's four largest lakes (Itasca, Elk, Ozawindib, and Mary) and the Mississippi River. Many of the park's smaller lakes and streams also support much smaller and less diverse fish populations than those found in the major water bodies. Although recent creel census data are not comprehensive and somewhat sporadically collected, Table 12 lists the species identified by Underhill and Dobie (1965). Current fish populations range from large game fish such as muskellunge, northern pike, large mouth bass, and walleye to small food sources for the larger fish in the food chain such as crappies, sunfish, and various minnow species. In addition to the game fish species found within Itasca State Park, the park's lakes and streams provide habitat for many non-

Table 12. Fishes of Itasca State Park in 1965[1]

	Mississippi River	Itasca Lake	Elk Lake	Mary Lake	Lake Ozawindib	LaSalle Creek
Tullibee		x	x			
Brown trout						i
Rainbow trout						
Brook trout						i
White sucker	x	x	x		x	x
Redhorse	x					
Creek chub	x		x		x	x
Pearl dace	x					
Hornyhead chub	x					x
Blacknose dace	x					x
Longnose dace	x					
Fine scale dace	x					
Redbelly dace	x					x
Golden shiner	x	x	x			x
Emerald shiner		x				
Common shiner	x	x	x	x	x	x
Spottail shiner	x					
Blackchin shiner	x	x	x	x	x	x
Spotfin shiner	x					
Bigmouth shiner	x					
Sand shiner	x					
Mimic shiner	x	x	x	x	x	x
Blacknose shiner	x	x	x	x		x
Brassy minnow	x					
Fathead minnow	x					
Bluntnose minnow	x	x	x	x	x	x
Black bullhead						x
Brown bullhead	x	x	x			
Tadpole madtom	x	x	x			
Mudminnow	x	x	x	x	x	x
Northern pike	x	x	x	x	x	x
Killifish	x	x	x	x	x	x
Yellow perch	x	x	x	x	x	x
Walleye	x	x	x		x	
Johnny darter	x	x	x	x	x	x
Iowa darter	x	x	x	x	x	x
Smallmouth bass		i				
Largemouth bass	x	x	x	x	x	x
Green sunfish	x	x	x		x	
Pumpkinseed	x	x	x	x	x	x
Bluegill	x	x	x	x	x	x
Rock bass	x	x	x	x	x	x
Black crappie	x	x	x	x	x	x
Sculpin	x					x
Stickleback	x	x	x	x	x	x

(i=introduced, x=present in waters indicated)

[1]Source: Underhill, J. and Dobie, J. (1965). The Fishes of Itasca. The Conservation Volunteer 28 (16), 14-29.

Note: Muskellunge were introduced into Elk Lake in 1982 and have subsequently spawned in Elk Lake.

game fish species that serve as food sources for the park's bird and mammal species. Among these are various minnow species, tadpole madtoms, chubs, and a sculpin (Table 12). The park's lakes also support several many plant species that serve as forage and spawning habitat for the fish populations.

Many of the species found within the park's lakes and streams are native species. Others have been introduced into the park through stocking programs that began in the early 1900s with stocking of bass in Morrison and DeSoto Lakes. Stocking activities were expanded to include walleye, crappies, northern pike, lake trout, and whitefish on the major lakes. Stocking was expanded again in 1982 to include the introduction of muskellunge to Elk Lake. Current stocking efforts include walleye and muskellunge and only occur on the park's four largest lakes. The specific quantity and species stocked in a given year varies depending upon estimated fish populations and availability of fish suitable for stocking. In addition, several of the park's smaller lakes prone to winter kill conditions are periodically used by the MNDNR, Section of Fisheries as brood stock lakes for the statewide stocking program. The specific lakes used for brood stock within the park varies from year to year.

Endangered, Threatened, and Special Concern Species

The Minnesota Natural Heritage & Nongame Research (NHNGR), Nongame Wildlife Program and the Minnesota County Biological Survey document locations of rare features, including plants and animals, natural communities, and selected animal aggregations and geologic features. Each entity is termed an "element." Statewide locations of these elements are stored in a geographic computerized database, known as the Natural Heritage Information System. Both state and federally listed species are represented in the database. Although the County Biological Surveys have not been completed for the three counties in which Itasca is located (Becker, Clearwater, and Hubbard), the Rare Features Database does include some features found within Itasca State Park.

The state rare and endangered species list classifies species into one of three categories; endangered, threatened, or species of special concern. Endangered species are those threatened with extinction throughout all or a significant portion of its range. Threatened species are those that are likely to become endangered within the foreseeable future. And, species of special concern are those that, although not endangered or threatened, are uncommon in Minnesota or have unique or highly specific habitat requirements that deserve careful monitoring of their status (Coffin and Pfannmuller, 1988).

Known Rare Features Within Park Boundary

Animals

Six rare animal species have been identified within Itasca State Park (Table 13). Both the bald eagle and the gray wolf are listed as species of special concern on the state list and the trumpeter swan is listed as a threatened species on the state list.

Table 13. Itasca State Park Rare Animal and Plant Species [1]

Common Name	Species Name	Fed. Legal Status	MN Legal Status
Animals			
Gray wolf	*Canis lupus*	END	SPC
Trumpeter swan	*Cygnus buccinator*	NFL	THR
Bald eagle	*Haliaeetus leucocephalus*	THR	SPC
Red-shouldered hawk	*Buteo lineatus*	NFL	SPC
Headwaters chilostigman	*Chilostigma itascae*	NFL	END
Snapping turtle	*Chelydra serpentina*	NFL	SPC
Plants			
Cooper's milk-vetch	*Astragalus neglectus*	NFL	NON
Matricary grapefern	*Botrychium matricariifolium*	NFL	NON
Mingan moonwort	*Botrychium minganense*	NFL	SPC
Goblin fern	*Botrychium mormo*	NFL	SPC
Least moonwort	*Botrychium simplex*	NFL	SPC
Cuckoo flower	*Cardamine pratensis var. palustris*	NFL	NON
Hair-like sedge	*Carex capillaris var. major*	NFL	NON
Ram's-head lady's-slipper	*Cypripedium arietinum*	NFL	THR
Olivaceous spike-rush	*Eleocharis olivacea*	NFL	THR
White adder's-mouth	*Malaxis monophyllos var. brachypoda*	NFL	SPC
Bog adder's-mouth	*Malaxis paludosa*	NFL	END
Slender naiad	*Najas gracillima*	NFL	SPC
Wolf's bluegrass	*Poa wolfii*	NFL	SPC
Sheathed pondweed	*Potamogeton vaginatus*	NFL	SPC
Vasey's pondweed	*Potamogeton vaseyi*	NFL	SPC
Clinton's bulrush	*Scirpus clintonii*	NFL	SPC
Clustered bur-reed	*Sparganium glomeratum*	NFL	SPC
Torrey's manna-grass	*Torreyochloa pallida*	NFL	SPC
Humped bladderwort	*Utricularia gibba*	NFL	NON

Legal Status Legend
END Endangered
THR Threatened
SPC Special Concern
NON No Legal Status (elements that are being monitored by NHNRP)
NFL No Federal Listing

[1] Adapted from: Minnesota DNR, Natural Heritage and Nongame Research Program (1998), Minnesota Natural Heritage Database. St. Paul, MN: Minnesota Department of Natural Resources.

Bald eagle

The bald eagle is listed as a species of special concern on the State of Minnesota's list and threatened on the federal list for Minnesota, Wisconsin, Michigan, Oregon, and Washington. In the other states within the lower 48 states, it remains endangered on the federal endangered species list. Although the exact number of bald eagle nests within Itasca State Park is unknown, four bald eagle nesting sites have been documented in the park. It is also quite common for visitors to observe the birds in flight within the park. Bald eagles select lakes and rivers in forested areas where large trees are available for nesting. In Minnesota, nests are often found in the upper canopy of red and white pines. Areas around the nesting trees should be protected from disturbances, especially during nesting season (Coffin and Pfannmuller, 1988).

Gray wolf

The gray wolf is a species of special concern on the State of Minnesota's list and a federally endangered species in all of the 48 lower United States except Minnesota where it is listed as federally threatened. Prior to European settlement of North America, the gray wolf's habitat covered a considerable portion of the continent, including most of Minnesota. Loss of natural habitat, reduction of prey, hunting to eliminate wolves, and increased human settlement reduced the range to mostly Canada and Alaska. The northern half of Minnesota is on the southern edge of the current range. Minnesota's wolf population is currently rebounding as a result of habitat management and hunting restrictions, and is estimated to be in excess of 2,000 animals. This makes the state's population the largest gray wolf population in the lower 48 states of the United States. Gray wolf population size is largely regulated by habitat size. Within the habitat, the presence of large mammals such as deer, moose, elk, and caribou that are its natural prey are necessary to sustain the wolf population. As the habitats for the wolf's prey were reduced by human activity, the wolf's range and population size decreased. Although the exact number of wolves using Itasca State Park is unknown, survey research has documented at least one resident pack of five to eight animals within the park. Evidence of other wolf activity has also been observed in the park in all seasons.

Trumpeter swan

Once extirpated from Minnesota, the trumpeter swan is currently a threatened species on the State of Minnesota's list. Prior to European settlement, the trumpeter swan was a common species in large portions of the Midwest, including Minnesota with a winter range as far south as Texas and Louisiana. Extensive hunting and habitat degradation eliminated the species from Minnesota as a nesting species by the late 1800s and reduced the national population to less than a hundred birds by the 1930s. The Hennepin County Park Reserve District began an extensive program to reintroduce the trumpeter swan to Minnesota as a nesting bird in the 1960s. In the early 1980s, the Minnesota Department of Natural Resources began a program to accelerate the Hennepin County Park Reserve District's reintroduction efforts outside of the Twin Cities metropolitan area. The first release of swans through the state program occurred in 1987 at the Tamarac National Wildlife Refuge just south of Itasca State Park in Becker County (Kittelson, 1996). This release was followed by others in northwestern Minnesota and Nicollet, St. Louis, Itasca, and Jackson Counties from the late 1980s

through the mid-1990s. Releases were also conducted within Itasca State Park. In addition, numerous released birds have begun to nest and naturally reproduce in Minnesota. It is estimated that the current trumpeter swan population in Minnesota is in excess of 500 birds with approximately 50 known nesting pairs (Kittelson, 1998). Swans are commonly seen on many lakes in Itasca. As the size of the state's trumpeter swan population has continued to increase and nesting pairs continue to produce offspring, this bird's status on the state's endangered species list has changed from no listing at all because it was considered to be eliminated as a nesting bird to its current status as a threatened species.

Red-shouldered hawk

The red-shouldered hawk is a species of special concern on the State of Minnesota's list. The red-shouldered hawk's original range covered most of the eastern United States, portions of southeastern Canada and the eastern Great Plains. The species was also found in southwestern Oregon and California. The red-shouldered hawk was never very common in Minnesota, and it was not documented nesting in the state until 1935 (Coffin and Pfannmuller, 1988). The species remains scarce in Minnesota today and has declined in the northern states since the 1940s. Although some evidence exists to suggest that one reason for its decline is pesticide contamination, loss of habitat is believed to be the primary reason for its decline (Coffin and Pfannmuller, 1988). This species' preferred habitat is moist lowland woods and river bottoms. In addition, hunting areas such as marshes and wet meadows are important components of this species' habitat. Although the exact number of red-shouldered hawks within Itasca State Park is unknown, survey research has documented the bird's presence in the park.

Headwaters chilostigman

The headwaters chilostigman is a species of caddisflies that is endemic to Minnesota and known to exist only in Itasca State Park. Because of its extremely restricted distribution, the species is an endangered species on the State of Minnesota's list. The species was discovered in 1974 in a wetland meadow near one of the park's slow-flowing creek. Identification of headwaters chilostigman was also the first record of the genus *Chilostigma* in North Armerica. Previously, this genus had been represented by a single species from Scandinavia. The headwaters chilostigman is a winter emerging species that has been observed when temperatures were below zero degrees Farenheit (MNDNR, Fish and Wildlife, 1995).

Snapping turtle

The snapping turtle is a species of special concern on the State of Minnesota's list. The snapping turtle occurs in the eastern United States and southern Canada. Although the species is found in a wide variety of aquatic habitats throughout Minnesota, it prefers slow-moving, quiet waters with muddy bottoms and dense vegetation. This makes it common to Minnesota's lakes, rivers, and marshes. Despite its relatively common occurrence, it is identified as a species of special concern in Minnesota primarily because of the potential impact that licensed commercial harvesting can have on local populations (Coffin and Pfannmuller, 1988). Snapping turtles are fairly common to Itasca's lakes and wetlands.

Plants

Although there are no known federally listed plant species within Itasca State Park, fourteen plant species found within the park are state listed and an additional five species of plants are being monitored as potential future state listings (Table 13). Brief descriptions of the state listed endangered and threatened plant species follow. Habitat descriptions of the special concern species can be obtained from state park staff, the NHNGR program staff or from Coffin and Pfannmuller (1988).

Bog adder's - mouth

This orchid is extremely rare in North America and is identified as an endangered species on Minnesota's List of Endangered, Threatened, and Special Concern Species (Table 13). Fewer than 30 sites have been identified in the United States, six of these are in Minnesota. Of these, only three sites are known to remain in Minnesota. A small number of sites have also been discovered in Canada. For this reason, bog adder's - mouth is considered to be the rarest orchid in North America and its populations often consist of only a few plants. Bog adder's - mouth is also the smallest orchid known to exist in Minnesota. Its stems are only a few centimeters in length, it has only 2-5 leaves per stem, and it usually has between 10 - 29 minute greenish yellow flowers per plant. This species grows perched on hummocks of sphagnum moss in swamps (Smith, 1993). The three known populations in Minnesota all occur in coniferous swamps. This rare plant was first discovered in the area that would eventually become Itasca State Park's Scientific and Natural Area in 1915 and seen again in 1949 (MNDNR, Scientific and Natural Areas Program, 1986).

Olivaceous spike - rush

This plant is usually found along the Atlantic Coastal Plain's wetlands but it is also occasionally found inland. It is identified as a threatened species on Minnesota's List of Endangered, Threatened, and Special Concern Species (Table 13). Only a small number of sites have been identified in Minnesota. Olivaceous spike - rush is a small sedge plant that has been discovered in bog areas or along muddy lakeshores in Minnesota. It is difficult to spot olivaceous spike-rush because of its similarity to other spike - rushes, but its distinguishing characteristics are its short (two to six cm) and bright green stems and its olive green fruit. This spike-rush has been found on at least one site in Itasca State Park.

Ram's - head lady's - slipper

Within its range in the northern Great Lakes, New England states, and the southern portion of eastern Canada, this orchid is rare to extremely rare. The species is in general decline throughout its range and is identified as a state threatened species (Table 13). In Minnesota, this decline is largely attributed to habitat loss caused by increased agricultural activity. The ram's - head lady's - slipper is believed to have once occupied many of the forested areas of Minnesota. It is now primarily found in isolated areas of northern Minnesota. The species occurs in coniferous forests dominated by white, red, or jack pine. It is also found growing on sphagnum moss in bogs dominated by white-

cedar, tamarack, or black spruce (Coffin and Pfannmuller, 1988). This orchid is small with stems of 15 - 32 cm, only 3 -5 leaves per stem and is well camouflaged by its dark green leaves. It's most distinguishing feature is its pouch which, when viewed in conjunction with the leaves that surround it, takes on the appearance of a charging ram's head. The pouch is whitish or pinkish with purple veins (Smith, 1993). At Itasca, ram's - head lady's - slippers can be found along some of the park's bog trails in the interior forests or along the shoreline of the park's lakes.

Other Unique Features

In addition to the endangered, threatened, and special concern species found within Itasca State Park, the Natural Heritage Information System lists several other features that make the park unique. Among these are the holocene stream and quaternary tunnel valley geologic processes resulting from glacial activity and the red pine and white pine forest communities.

Exotic Species and Other Pests

Exotic species are those species that are introduced into ecosystems where they are not native. Introduction can occur accidentally, intentionally, or through natural phenomena (e.g., invasion of pest species following a major natural disturbance). Invasive species can be extremely disruptive to native ecosystems. Freed from natural predators, parasites, pathogens, and competitors that control them in their native environments, exotic species often become dominant in their new environments and displace native species. Because Lake Itasca is the headwaters of the Mississippi River, the introduction of harmful exotic species in Itasca State Park is of national concern. Exotic species introduced to the park could spread downstream throughout the state, as well as the Mississippi River watershed that drains much of the nation. For this reason, prevention of new introductions and management of existing exotic species are important resource management activities within the park.

Although exotic species are not yet a major threat in Itasca State Park, some exotic species do currently exist in the park. The size of individual species populations and the extent to which individual species pose future threats to the park's natural systems varies by species. Plant species such as spotted knapweed *(Centaurea maculosa),* common tansy *(Tanacetum vulgare),* Canada thistle *(Cirsium arvense)* have relatively large populations in the park and appear to be spreading and out competing native species. These species pose the greatest threat to the park's natural communities. Other plant species, such as bull thistle *(Cirsium vulgare),* yellow sweetclover *(Melilotus officinalis),* and Birdsfoot trefoil *(Lotus corniculatus)* are present in the park but appear not to be spreading much beyond their existing locations. Still other plant species, such as tatarian honeysuckle *(Lonicera tatarica),* Siberian pea-tree *(Caragana arborescens),* and common lilac *(Syringa vulagris)* are trees and shrubs whose populations are currently small and localized.

Several highly invasive exotic plant species that are not yet present in the park, have been found in areas near the park. Many of these species have been found to be invasive to other forested ecosystems in Minnesota and nearby states. Among these are Eurasian buckthorn *(Rhamnus cathartica),* fen buckthorn *(Rhamnus frangula),* and garlic mustard *(Alliaria petiolata).*

Aquatic exotic species do not currently present problems within Itasca State Park. However, an assortment of aquatic exotic species that are currently not present in the park could survive in the park's lakes and wetlands. Purple loosestrife *(Lythrum salicaria),* is in nearby lakes and could establish in the park's wetlands or shorelines. Other aquatic plant and animal species, such as ruffe *(Gymnocephalus cernuus),* round goby *(Neogobius melanostomus),* Eurasian watermilfoil *(Myriophyllum spicatum),* spiny water flea *(Bythotrephes cederstroemi),* and zebra mussels *(Dreissena polymorpha)* could be transported to the park on trailered boats and equipment or in bait containers.

Itasca State Park also has some land-based exotic animal species such as night crawlers *(Lumbricus terrestris)* and other worm species that are not known to present major problems at this time. As a result, no major plans have been developed to control or eradicate these particular species. It is also probable that other exotic species and diseases will eventually threaten the native species. Among these are the gypsy moth *(Lymantria dispar),* white pine blister rust *(Cronartium ribicola),* Asia longhorned woodboarer *(Anoplophora glabripennis),* common pine shoot beetle *(Tomicus piniperda)* and Dutch elm disease *(Ophiostoma ulmi).*

Currently exotic species management within the park focuses on monitoring and containment of existing exotic species and dissemination of information regarding exotic species to help prevent introduction of new species. Exotic species signs are posted at all of the park's boat accesses, brochures are distributed to visitors at the park's contact stations, park interpretive and resource management staff discuss exotic species management with visitors when opportunities arise, and visitors are encouraged to report questionable species to park personnel for identification. In addition, the concessionaire who operates the park's boat and canoe rental provides information regarding exotic species to their customers on a regular basis.

In addition to the exotic species, several native species have become pests within Itasca State Park because they have increased in numbers as a result of changes in management and land use that have disrupted natural processes over time. As a result, the relative population size of these species is larger than would be the case in an unaltered system. Among these species are aspen conk *(Phellinus teremulae),* armillaria root rot *(Armillaria),* poison ivy *(Thus radicans),* and pine bark beetles *(Ips pini).*

Itasca Wilderness Sanctuary Scientific and Natural Area

The Itasca Wilderness Sanctuary Scientific and Natural Area is a 2,000 acre section of Itasca State Park that was initially set aside in 1939 by the Minnesota Department of Conservation at the suggestion of the Minnesota Academy of Science as a wilderness sanctuary to represent a portion of the pine forests found in the area prior to logging operations. This section of the park was set aside for two reasons: (a) it was largely undisturbed by logging operations; and (b) it had been largely undisturbed by park related facilities. In 1965, the sanctuary was designated a National Natural Landmark by the U. S. Department of Interior and in 1982 the Itasca Wilderness Sanctuary was designated a State Scientific and Natural Area (SNA) by the Department of Natural Resources. The current boundary and forest cover types of the SNA are displayed in Figure 12.

Since its establishment, the Itasca Wilderness Sanctuary has served as a research site for scholars from the University of Minnesota and other institutions; preserves significant natural and cultural features, including several of the park's rare and endangered species; and provides visitors with the opportunity to find solitude and other beneficial experiences in a natural environment. Among the remnants of forest and swamp communities found within the Wilderness Sanctuary SNA are red pine forest, white pine forest, transitional northern hardwood forest, aspen-birch forest jack pine forest, shrub swamp, hardwood swamp, and conifer swamp (MNDNR, Scientific and Natural Area Program, 1986A). The Itasca Wilderness Sanctuary SNA contains some of the largest blocks of old-growth pine and hardwood forest communities found within the park (Figures 10 and 12). This mixture of forest elements continues to be representative of the mosaic of forest ecosystems found in the park at the time of European settlement.

It was these important natural features that led to designation of the Itasca Wilderness Sanctuary as a National Natural Landmark. The National Natural Landmark program is a cooperative effort between the U.S. Department of Interior, National Park Service and other land managers to protect and perpetuate natural and cultural resources outside the National Park System that are of national or international significance. Natural National Landmarks are intended to be large areas that illustrate or interpret the variety of terrestrial and aquatic communities, landforms, geological features, and habitats of native plant and animal species that constitute the nation's natural history. The designation lists these areas on the National Registry of Natural Landmarks and encourages land owners to maintain the conditions that prompted nomination and designation. National Park Service staff periodically assist in monitoring sites to evaluate their resource condition and make recommendations for maintaining each landmark's integrity over time.

Almost 20 years after its designation as a National Natural Landmark, the Itasca Wilderness Sanctuary was designated a State Scientific and Natural Area for many of the same reasons that led to the federal designation. Although designation of the Itasca Wilderness Sanctuary as a Scientific and Natural Area did not change its status under the National Natural Landmark Program, the Scientific and Natural Area designation gives the sanctuary an added level of protection under state law and is consistent with the National Natural Landmark Program's intent to work cooperatively with land managers to maintain the national significance of National Natural Landmarks.

Minnesota state law and MNDNR policy governing Scientific and Natural Areas is very prescriptive regarding management activities that can occur within the boundaries of an SNA. Resource management is confined to those activities that support or emulate natural processes and provide research opportunities. Recent resource management activities have included prescribed burns to restore fire to the ecosystem. Recreation within the SNA is confined to those activities that will not leave signs of human use of the area. As a result, facilities for activities such as picnicking, camping, boating, swimming, etc. cannot be provided within the SNA. Access to the SNA is from Wilderness Drive on the west or by boat from Lake Itasca on the east. An orientation opportunity is offered at the Landmark Trail Information Kiosk on the northern edge of the SNA. Bohall Hiking Trail provides foot access from Wilderness Drive to Bohall Lake in the interior of the SNA. An additional description of recommended management direction for the SNA is found in Chapter 3 (Management Zoning).

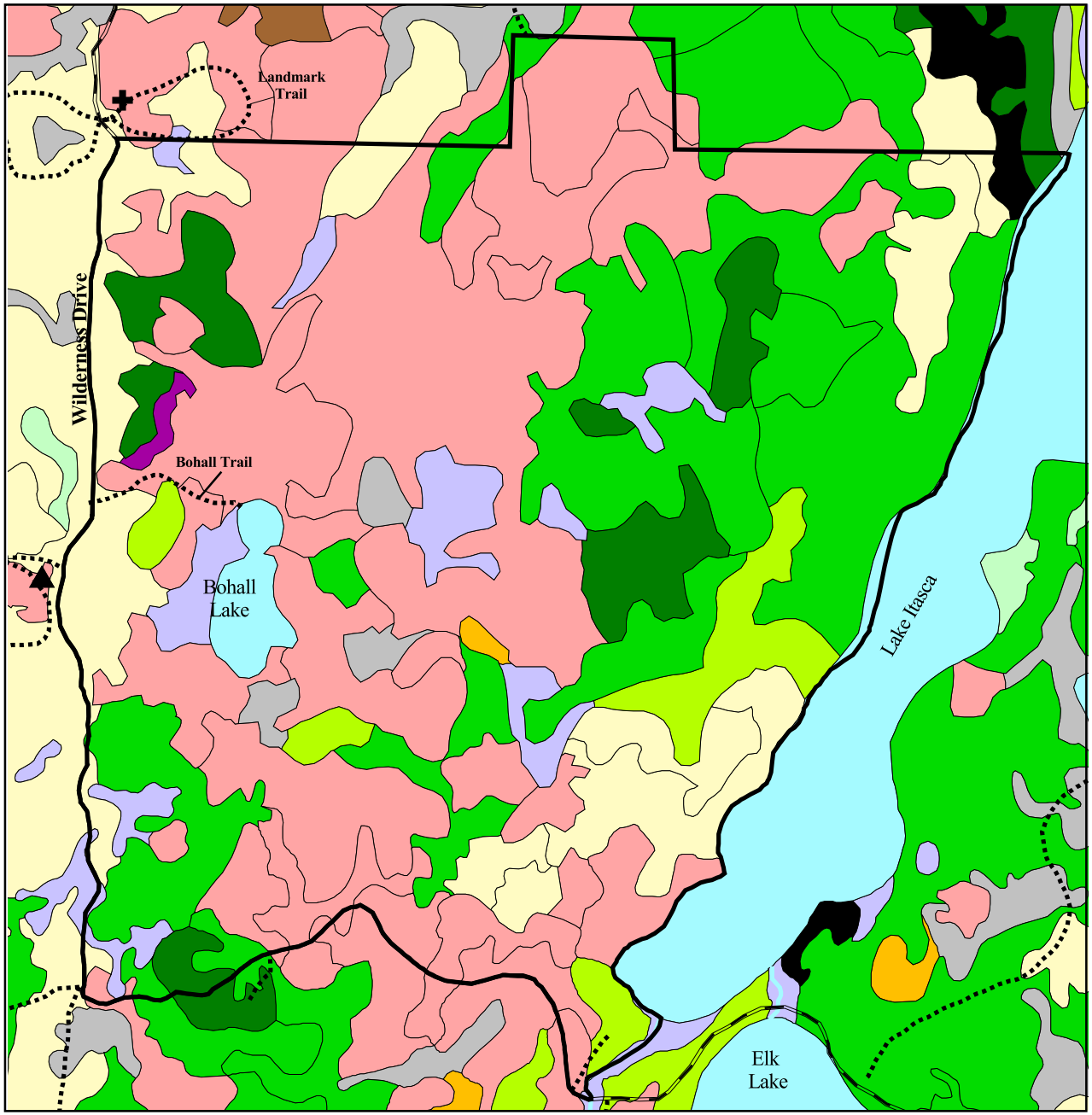


Figure 12. Itasca State Park Wilderness Sanctuary Scientific and Natural Area

Legend

N

- Forestry Demonstration Area
- Landmark Trail Information
- Roads
- Trails
- Scientific and Natural Area

Current Cover Types in the SNA

- Ash
- Aspen
- Black Spruce Lowland
- Bog
- Development
- Jack Pine
- Lakes
- Lowland Brush
- Lowland Hardwoods
- Marsh
- Northern Hardwoods
- Norway Pine
- Tamarack
- Upland Grass
- White Pine

0.25 0 0.25 0.5 Mile

Source: BRW, Inc and DNR Forestry, 1998

Recommendations and Actions

Itasca State Park's natural resource management program should focus on attainment of the natural resource management goals and target benefits identified earlier in this chapter and realization of the vision and mission statements found in Chapter 1. Resource management actions should adhere to the management zoning concepts presented in Chapter 3 and be consistent with the park's overall target benefits identified in Chapter 3. Within this context, natural resource management activities undertaken to implement the following recommendations should be tailored to the management zone where they will occur according to the following general resource management guidelines for each zone.

Zone 1 (SNA): Natural resource management in this zone should ensure that natural processes are protected and allowed to occur while managing for the native biodiversity found within the zone. Adherence to the regulations governing State Scientific and Natural Areas and National Natural Landmarks is also essential in this management zone. As such, only those resource management activities that are consistent with natural processes, the SNA regulations, and the National Natural Landmark regulations should be undertaken.

Among the natural resource management activities identified for this zone are (a) prescribed burning to return fire to the ecosystem, (b) seed collection to maintain the SNA's genetic stock, (c) research and monitoring of species and ecosystem health, and (d) protection of native species habitats from human impact.

Zone 2 (Backcountry): Natural resource management in this zone should seek to allow natural processes to occur wherever possible and seek to emulate natural processes in the remaining portions of the management zone. Active management should be used to restore and sustain natural processes and maintain the native biodiversity found within the zone.

Among the natural resource management activities identified for this zone are (a) prescribed burns to return fire to the ecosystem and aid in forest regeneration, (b) tree planting, (c) erosion control, (d) lake management planning, (e) research and monitoring of ecosystem health, and (f) protection of native species habitats from human impact wherever possible.

Zone 3 (Concentrated Use): Natural resource management activities in this zone should focus on maintaining aesthetically pleasing representations of native forest systems for visitors to experience. Active natural resource management should be undertaken in this zone to accomplish this objective.

Among the natural resource management activities identified for this zone are (a) prescribed burns to aid in ecosystem regeneration, (b) tree planting, (c) intensive

erosion control to mitigate against visitor impacts, (d) pest and disease management, budcapping tree seedlings to protect against deer browsing, (e) lake management planning, (f) fish stocking as need to accomplish aquatic management goals, (g) research and monitoring of ecosystem health, and (h) protection of native species habitats from human impact wherever possible.

Although the existing natural resource management program generally reflects this management zone delineation, some improvements are recommended. Program improvement requires increased funding to support natural resource management activities and continued cooperation between MNDNR state park staff and other resource management entities, such as the MNDNR, Division of Fish and Wildlife and MNDNR, Division of Forestry, the U.S. Fish and Wildlife Service, the National Park Service, the U.S. Forest Service, Indian tribal governments, and local governments to implement the recommendations. Continued cooperation with the University of Minnesota and other research institutions is also necessary to implement these recommendations.

The recommendations and management actions that follow are intended to provide a general direction for natural resource management activities in the park for the next 15 - 20 years. Annual work planning meetings will use these recommendations to determine short-term goals, priorities, and actions. Many of the management actions listed below are, therefore fairly broad and will become more specific through the work planning process, and as we learn more about the specific resources involved in their implementation. Some of the management actions are also quite specific, and the resource management steps needed to implement them are fairly well known.

The following recommendations and management actions address some of the major areas where current natural resource management efforts can be improved. Some of these recommendations speak to general natural resource management activities, some speak specifically to forest management practices, and others speak specifically to water management practices. As the recommendations are implemented, it is important to maintain an effective balance between the various components of the natural resource management program and consider the impacts that human interaction with the natural environment through recreational activities will have on the park's natural resource communities. It is also important to recognize that these recommendations and actions have been developed with the recognition that conditions will change over time and that the recommended actions might require adjustment to reflect these changes.

Recommendation: Focus natural resource management activities on ecosystem management rather than single species management.

Discussion: The ecosystem management approach is generally described as giving first priority to protecting and restoring the native diversity (including species and communities), and the ecological patterns and processes needed to maintain that diversity. Each species within a given community fills a niche that is interconnected to many other species. Therefore the management actions taken to

manage for one species, impact many other species in the system. Ecosystem management recognizes these interconnections and challenges managers to look at the broader systemic picture. For example, regeneration of a pine forest includes consideration of the particular pine species found within the forest but also the flora and fauna, soil characteristics, and other environmental conditions associated with a healthy pine forest ecosystem. The Minnesota Department of Natural Resources has established a long-term goal of managing the State's natural resources in a way that is sustainable for future generations. Ecosystem management is the approach that has been identified to accomplish this goal. One of the primary goals of this planning process was to determine how to manage Itasca State Park from an ecosystem management perspective.

Actions to Implement Recommendation:

A. Inventory species and communities found within the park on a regular basis;

B. Continue to examine community structures and relationships between species to determine indicators of overall ecosystem health;

C. Continue to identify and implement the most effective natural resource management techniques to use to accomplish the park's natural resource management goals and maintain the ecological integrity of the communities found within the park;

D. Minimize habitat fragmentation to protect the park's biological diversity;

E. Incorporate concepts of biodiversity, ecosystem management, and watershed/ landscape management into park interpretive and environmental education programs and displays;

F. Use GIS computer technology to identify and map existing communities and aid in planning future natural resource management activities;

G. Participate in local and regional planning efforts to sustain healthy ecosystems;

H. Increase efforts to interpret why and how specific management activities are chosen for the park; and

I. Monitor and evaluate overall ecosystem health within the park.

Recommendation: Sustain healthy and diverse native animal and plant populations.

Discussion: Managing for ecosystem health at Itasca State Park includes identifying and conserving viable populations of native species, using natural disturbances such as prescribed fires to

maintain and restore communities, and increasing native species diversity in the park. For purposes of this management plan, native species are generally considered to be those known to be present in the park prior to European settlement of the Itasca area. Species that might have been common to the Itasca area but were not found in the park, are generally not considered to be native species for the park. When completed, the County Biological Survey and the Ecological Classification System will help obtain accurate and useful information with which to determine the most appropriate ecological communities for the park. General Land Survey notes are also available as a tool to aid in identification of the park's native species.

Actions to Implement Recommendation:

A. Encourage completion of the County Biological Surveys for Clearwater, Becker and Hubbard Counties;

B. Conduct a complete survey of the park's flora and fauna;

C. Protect Federal and State designated rare plants and animals known to exist within the park and manage their habitats for sustainable conditions;

D. Work with MNDNR, Division of Fish and Wildlife to develop and implement strategies for achieving a relatively low number of deer within the park. Observations at Itasca State Park strongly suggest that deer are having a significant, negative impact on forest species, including red and white pine. Staff should work to reach deer population levels that are low enough to allow forest regeneration. State statute and guidelines developed by MNDNR allow deer to be managed in parks through regulated hunting. Hunting options range from holding special hunts to simply opening the park during the regular firearms season, as Itasca has for several years. Options should also be explored to make interior areas of the park as accessible as possible during regulated hunts;

E. Continue to monitor and manage beaver populations to minimize negative impacts on park infrastructure;

F. Monitor existing exotic species populations, watch for populations of new exotic species, and adopt appropriate control measures, in consultation with the MNDNR Exotic Species Program and other resources on harmful exotic species;

G. Monitor human impacts on resources and consider movement toward eventual movement toward limitations on visitor use of sensitive areas. Such limitations are not considered appropriate at this time, however the option should be available for consideration if desired future conditions are not being met; and

H. Monitor native species populations and manage their habitats for sustainable conditions. Such management should include efforts to minimize fragmentation, edge effects and other encroachments on species and ecosystems.

<u>Recommendation</u>: Adopt a set of forest management guidelines aimed at restoring, regenerating, and protecting pine forest ecosystems within the park.

<u>Discussion</u>: The MNDNR and the University of Minnesota (1994) identified three major natural resource management goals for Itasca State Park directly related to regeneration of the park's pine forest ecosystem. These involve restoration of pine stands in high use areas where they have been destroyed or damaged by intensive use, regeneration of pine communities in selected areas of the park, and restoration of the remaining communities within the park to desired conditions. Regeneration efforts should be focused on areas of the park where people go most frequently and those areas where the highest probability for successful regeneration exists. Identification of areas suitable for regeneration should consider soils information (Figures 4, 5, and 6), pre-European vegetation (Figure 8), existing vegetative cover types (Figure 9), potential impacts from deer browsing, and intensity of human use of the area. In determining potential pine regeneration sites, managers should also recognize that pre-European settlement vegetation included mixed pine/ hardwood communities and hardwood communities. Restoration efforts should, therefore include restoration of a mixed pine/ hardwood forest that resembles pre-European settlement conditions as much as possible. Management techniques to accomplish regeneration and maintenance of forested areas should mimic natural processes as much as possible, and natural processes should be allowed to occur where possible. Managers should recognize that a continuum of forest management techniques exist for possible use within the park ranging from tree cutting and use of herbicides or pesticides to use of prescribed burns and predator control. Selection of the specific techniques to be used should be site specific and consistent with the management zone concepts and the relevant target benefits. Natural resource management techniques selected should also be those most closely resembling natural processes that will allow for achievement of the park's natural resource management goals.

Actions to Implement Recommendation:

A. Develop an overall vegetation management plan for the park;

B. Complete and periodically update vegetative inventories for the park;

C. Complete the old-growth delineation project currently underway with the MNDNR, Division of Forestry. Continue to designate stands for old-growth or future old-growth according to DNR old-growth guidelines;

D. Identify the areas of the park most suitable for regeneration and develop management objectives and prescriptions that include measures of success for each site recognizing that some of the measures will vary according to the site;

E. Continue the park's tree planting program consistent with forest regeneration goals. Seedlings planted in the park should be grown from seeds collected in the park when possible and should always be native species;

F. Continue the park's prescribed burn program to ensure that forested areas of the park, where regeneration is a priority, are exposed to fire on a regular basis;

G. Establish reasonable measures of success for regeneration that are both prescriptions of future conditions and sufficiently flexible to recognize that natural processes are unpredictable and variable. Potential measures might include the degree to which biodiversity found within the park is maintained, stands of various ages and single aged stands change over time, and fire influences the forest system; and

H. Maintain a strong environmental education component to forest management activities.

Recommendation: Adopt an Itasca State Park tree cutting and removal policy to aid in forest management within the park.

Discussion: This policy should recognize that selective tree cutting is a management tool that can be used on specific sites to aid in achieving the resource, visitor, and other management goals established for the management zone in which the site is located. Within each management zone, cutting decisions should be made on a site-by-site basis to support the site's overall resource and management goals. Species regeneration, disease control, historical and cultural resource protection, or hazardous tree management are among the management activities that might be appropriately supported by selective cutting.

In addition, this policy should address potential removal of trees from actively managed sites. Dead, downed, or cut trees should be left where they are to naturally decompose except when removal of specific trees is in accordance with the established resource or recreation management objectives for the management zone in which the site is located. Removal may also be appropriate to protect public safety and for disease control. Within each management zone, the decision to remove selected trees should be made on a site-by-site basis and be consistent with the established management regime for the site.

The following guidelines should be followed to determine when tree removal is appropriate in each of the park's proposed management zones:

Zone 1 (Scientific and Natural Area): Tree removal in this zone should only occur for hazardous tree removal adjacent to Wilderness Drive.

Zone 2 (Backcountry): Tree removal should only be used in this zone when other less severe forest management techniques have been unsuccessful at meeting resource

management goals. Tree removal should only be used to support efforts to mimic or restore pre-European settlement natural processes, support pine regeneration, facilitate disease control, provide recreational access, maintain facilities, or protect public safety.

Zone 3 (Concentrated Use): Tree removal should only occur in this zone to support efforts to regenerate pines, maintain aesthetic quality, facilitate disease control, provide access, protect buildings and facilities, or protect public safety.

When removal occurs, techniques that cause minimal or no disturbance to the site's aesthetics, natural vegetation, soils, microbes, and animal habitats should be used. Efforts should also be made to interpret the reasons for the removal and the expected results of removal to park visitors.

Recommendation: Maintain healthy and diverse aquatic systems.

Discussion: Itasca State Park's water resources are very important to the overall health of the ecosystems found within the park. The presence of over 100 lakes, wetlands, and streams completely within the boundary of the park makes these resources unique. The park's water resources also have national significance because most of them are positioned at the beginning of the Mississippi River Headwaters Major Watershed. The major goals of water resource management in the park are: (a) to protect surface and ground water against degradation of water quality; (b) maintain the biodiversity found within these resources; (c) manage for healthy aquatic ecosystems; and (d) engage in sustainable resource management practices.

Park staff should work with the MNDNR, Division of Fish and Wildlife and Division of Waters and other water resource management agencies in the area to establish water management goals and identify water management strategies that protect and maintain water recreation opportunities while protecting the park's aquatic resources. This cooperation should include development of lake management plans for the major bodies of water within the park and use of sustainable water management techniques that protect native species. In general, lake management plans should call for periodic examination of community structure and surveys to assess visitor satisfaction including measurement of angling pressure. Periodic monitoring of surface and ground water quality should also be accomplished in cooperation with the Minnesota Pollution Control Agency (MPCA) and other MNDNR divisions.

Water management goals, objectives and actions established for the park should reflect the management zone guidelines developed for the park and the target benefits identified for each of the management zones. These goals, objectives, and actions should work toward restoring and maintaining sustainable ecosystems within the park's watersheds. Water management goals, objectives and actions should also be sensitive to the cultural significance of the park's water bodies. Specific water management actions should seek to restore or mimic natural processes wherever possible and move toward the long-term goal of managing for sustainability of all native flora, fauna, game, and non-game species.

Actions to Implement Recommendation:

A. Maintain the existing level of motorized public boat access to Lake Itasca, at least for the short-term future. The existing access should be repaired or modified as needed to prevent erosion, resource degradation, and power loading or to improve accessibility for people with disabilities. In addition, the current 10 mph speed limit should be maintained on this lake. Water quality, fishing pressure, and aquatic species health within the lake should be carefully monitored over time. Appropriate adjustments in management activity and regulations should be made as needed to reflect changes in condition;

B. Maintain the existing level of motorized public boat access to Lake Ozawindib, Elk Lake and Mary Lake, at least for the short-term future. Existing accesses should be repaired or modified as needed to prevent erosion, resource degradation, and power loading or to improve accessibility for disabled people. In addition, the current 10 mph speed limit should be maintained on these lakes. Water quality, fishing pressure, and aquatic species health within the lakes should be carefully monitored over time. Appropriate adjustments in management activity and regulations should be made as needed to reflect changes in condition.

   A long-term objective for management of these lakes might include elimination of motors and electronic devices on the lakes and implementation of a catch and release regulation to protect aquatic habitats and the visitor experiences and benefits associated with the management zone in which these lakes are found. Discussion of these potential changes in the current management regulations should occur through a public process and an amendment to this management plan should be adopted prior to implementation of such regulation changes. The discussion should also include examination of the impacts on visitor activities and experiences and accessibility issues relative to these lakes;

C. Lake access in Zone 2 (Backcountry) lakes (other than Elk, Ozawindib, and Mary) and streams should be maintained as non-motorized, walk-in only, and undeveloped. Water quality, fishing pressure, and aquatic species health within the lakes and streams should be carefully monitored over time;

D. Analyze the fisheries in Lake Itasca, Elk Lake, Mary Lake, and Lake Ozawindib to ensure continued health of fish populations and fishing opportunities for park visitors. However, fish management goals that aim toward maintaining aquatic ecosystem health should be established in cooperation with the MNDNR, Division of Fish and Wildlife and move toward stocking of only native species as identified by Underhill and Dobie (1965) in these lakes;

E. Monitor fish population health and water quality on Zone 2 lakes (other than Elk Lake, Mary Lake, and Lake Ozawindib) and stock only native species as identified by Underhill and Dobie (1965) on an as needed basis. Regularly scheduled fish stocking should not occur on these lakes;

F. Stocking in the Mississippi River, the streams in Zone 2 and the lakes and streams in Zone 1 (SNA) should not occur;

G. Work with MNDNR, Division of Fish and Wildlife to reevaluate the use of park waters for fingerling production and move toward gradual elimination of fish production activities within Itasca State Park;

H. Work with MNDNR, Division of Fish and Wildlife to develop lake management plans for those lakes where fish management activities occur on a regular basis. Such plans should focus on maintaining a healthy aquatic ecosystem;

I. Develop a regular creel census schedule for Lake Itasca, Elk Lake, Mary Lake, Lake Ozawindib and the other lakes and streams within the park where regular angling activity occurs. Adjust fishing regulations as necessary to maintain aquatic system health in these water bodies;

J. Develop indicators, standards, and a monitoring program to periodically assess the overall water quality of the park's lakes and streams;

K. Move toward eventual removal of the Elk Lake Dam when, and if, water level changes in Lake Itasca eliminate the need for an artificial barrier to fish movement between the two lakes, when the use of Elk Lake for the muskie brood stock program is discontinued, or when other conditions agreed to by both the Division of Parks and Recreation and the Division of Fish and Wildlife eliminate the need for the dam.

L. The Division of Parks and Recreation will work with the Division of Fish and Wildlife to reassess the need to maintain Elk Lake as a Muskellunge brood lake.

M. Evaluate the extent of the breach at the Headwaters dam and take appropriate management actions that might be necessary to maintain the quality of visitor experiences associated with Lake Itasca's current outlet.

<u>Recommendation</u>: Continue soil science analysis and practice sound soil conservation techniques in resource and recreation management actions.

<u>Discussion</u>: Soil survey data has recently been completed for Clearwater, Becker and Hubbard counties that provide sound baseline information for the park's soil texture types. Although the soil

survey data provides good insight into the surface soil characteristics it does not address subsoils which may differ substantially from the surface soils. Nor does the soil survey examine how particular soil types relate to their surrounding landforms and other natural features. This knowledge is particularly important for Itasca State Park because so much of the park is undisturbed. Several of the park's soils are also unusual to the area. As such, Itasca's soil resources are important natural resources.

Actions to Implement this Recommendation:

A. Develop a "best management practices" manual for the park's soils that should include a soil conservation and erosion control plan;

B. Monitor soil health and potential soil losses from erosion, runoff, etc.;

C. Continue to work with Soil and Water Conservation District staff to implement soil conservation measures; and

D. Over time, conduct subsurface soil analyses.

Recommendation: Increase the number of full-time, seasonal, and intern staff in the natural resource management program.

Discussion: Additional full-time and seasonal staff are needed to support the park's natural resource management program. Existing staff has not been able to meet the growing demand for natural resource management activities such as (a) tree planting, (b) prescribed burning, (c) disease and pest management, (d) monitoring of ecosystem health, (e) review of facility modification projects, and (f) management of volunteers. In addition, current staff is not able to meet the growing number of requests to provide assistance to environmental education efforts, news media, research institutions and other agencies who have an interest in Itasca State Park's natural resources and their management. Permanent funding should be made available to the park to support the resource management internship programs. Finally, current staff is unable to meet the program's growing research, monitoring and evaluation needs.

Actions to Implement this Recommendation:

A. Evaluate natural resource management staffing needs and hire an additional full-time resource management staff person and 2-3 seasonal natural resource management staff people to accomplish the natural resource management program's goals and implement the recommendations in this management plan;

B. Strengthen the park's natural resource management internship program and provide adequate funding for internships in the park's resource management budget;

C. Continue to explore other mechanisms to attain resource management staff assistance. Among these alternatives might be; contracting for services, participating in departmental staffing programs, and using Minnesota Conservation Corps crews:

D. Continue to increase the amount of training and outreach provided to other staff on resource management activities occurring within the park;

E. Recruit and train additional volunteers to assist with natural resource management activities; and

F. Maintain adequate housing opportunities for seasonal staff and interns within the park.

Recommendation: Continue to explore ways to involve a variety of people and agencies in natural resource management activities within Itasca State Park.

Discussion: Development of this management plan has been the result of an intensive public involvement effort that included more than 200 people. Many of these people participated in the long and arduous task of developing the recommendations found in this chapter. The energy and commitment that these people brought to the process is an incredible resource that is available to the park's management team for use in other resource management activities. An Itasca State Park Resource Management Advisory Committee was formed long before this planning process. This committee has been a major vehicle used to involve citizen volunteers in tree planting, trail repair, maintenance of bark beetle trap lines, research, and other projects in the park. These efforts have also been very successful and a strong cadre of citizen volunteers has evolved to aid in implementing the Itasca State Park Resource Management Program's activities. The success of the existing Resource Management Advisory Committee and the quality of this management plan are testimonials to the effectiveness of the work accomplished by the park's resource management volunteers. It is important that this energy continue to be harnessed for future projects and that efforts continue to be made to instill a sense of citizen ownership in the park.

Actions to Implement this Recommendation:

A. Continue to develop lists of natural resource management projects that volunteers can accomplish;

B. Provide increased staff assistance to organize, supervise, and guide volunteers;

C. Continue to hold regular meetings of the Itasca State Park Resource Management Advisory Committee to discuss resource management issues, develop strategies for addressing them, and enlist volunteers to aid in accomplishing the necessary tasks;

D. Continue to publicize volunteer successes and opportunities for public participation; and

E. Continue to work with neighboring public and private land owners to aid in ensuring protection of the park's critical natural resources.

Research and Monitoring

Periodic research and monitoring of Itasca State Park's natural systems is important in measuring system dynamics, changes in those systems, overall ecosystem health, and the effectiveness of efforts to implement the recommendations contained in this chapter. Although research on the behavior patterns, evolutionary changes, or habitat requirements for some species found within the park exists, basic species inventory and community level data are limited or nonexistent. Data sets such as the County Biological Survey, surficial geology survey, delineation of candidate old-growth stands, deer census, water quality, creel census, aquatic species inventories, and forest flora and fauna inventories do not exist or are in need of update. These baseline data are needed to establish an effective research and monitoring program for the park's natural resources and protect resources from degradation due to management actions and human use. In addition, research evaluating the impact of specific management techniques, human impacts on the resource, or changes related to natural phenomena is minimal. Baseline research on the environmental benefits attained from the park is nonexistent.

Clear, specific, quantifiable, and measurable management objectives should be developed for the natural resource management program to aid in monitoring and evaluating natural system health and the effectiveness of particular natural resource management actions taken in the park. Standards and indicators for ecosystem health, species diversity, and species health should be developed to provide specific measures for monitoring and evaluation. Similar objectives, standards, and indicators should be established for measuring the program's effectiveness at realizing its target benefits. Appropriate modifications in management techniques and direction should be made based on research results.

Chapter 5. Cultural Resource Management

Introduction

Itasca State Park has a long history of human activity dating as far back as 8,000 years when portions of it were inhabited by nomadic American Indian people. The park's many cultural features include (a) the 8,000 year old Itasca Bison Kill Site, (b) Woodland burial mounds, (c) multiple European exploration and pioneer settlement sites, and (d) the historic Douglas Lodge Complex. Acknowledgment of the significance of these sites has been realized by placement of the entire park on the National Register of Historic Places.

This chapter begins with a section which outlines the cultural resource management program goals. The next section of the chapter identifies the target benefits associated with cultural resource management in the park. The middle section presents an inventory and description of the park's cultural history and existing resources. A section near the end of the chapter lists the major cultural resource management recommendations and actions to accomplish the program goals and provide opportunities for realization of the target benefits. The chapter ends with a section on research and monitoring. This chapter and its associated references serves as the overall cultural resources management plan for the park.

Cultural Resource Management Goals

For purposes of this management plan, cultural resources are defined as those archaeological sites, cemeteries, historic structures, historic areas, cultural landscapes or traditional use areas that are of cultural or scientific value to the park, region, or nation. The following goals have been identified to guide cultural resource management in Itasca State Park:

- Preserve, restore and protect the park's significant cultural resources;
- Adhere to appropriate state and federal laws governing cultural resource management;
- Provide interpretive opportunities for the park's cultural resources;
- Manage for realization of the park's target benefits as they relate to cultural resources; and
- Develop an ongoing research and monitoring program.

Although these goals should guide cultural resource management activities throughout the park, translation of the goals into specific management actions will differ to some extent by management

zone and the specific cultural resource in question. The zone descriptions, guidelines, and target benefits presented in the management zoning chapter will aid in selecting specific cultural resource management actions for each management zone. Itasca State Park's cultural resource management program is part of both the park's resource management program and the statewide state parks cultural resource management program. As a result, continued cooperation with the Minnesota Historical Society, the Minnesota Indian Affairs Council, the Office of the State Archaeologist, and local tribal governments will be essential to effective cultural resource management in the park and maintaining compliance with state and federal laws governing cultural resource management.

Target Benefits

The Itasca cultural resource management program offers a variety of opportunities to attain many of the park's target benefits. A more thorough discussion of the park's target benefits is presented in the management zoning chapter than is found in this chapter. However, the park's target benefits that are most relevant to the cultural resource management program are among the environmental, visitor and community benefit types. The most relevant target benefits for each of these benefit types are listed below.

Environmental benefits: The park's cultural resource management program should provide opportunities to attain the five target environmental benefits identified for the park (Table 7). The park's cultural resources are significant components of the environment found within and around the park and represent important links to understanding how that environment has changed over time. The park's five target environmental benefits are (a) environmental stewardship and preservation, (b) providing a place for understanding human adaptation to the environment, (c) providing a place to enhance environmental ethics, (d) fostering increased awareness of environmental and cultural issues, and (e) environmental protection.

Visitor benefits: Visitor activity that occurs within the park includes at least peripheral contact with the park's cultural resources, cultural resource management plays a significant role in the effort to provide opportunities for attainment of many of the park's nine target visitor benefits (Table 4). However, the target visitor benefits that are most closely identified with the park's cultural resources are most likely (a) enjoyment of nature and friends; (b) learning; (c) solitude and escape; and (d) relaxation and new experiences. Other important visitor benefit opportunities that the cultural resource management programs contributes to are appreciation of the area's cultural history, development of a sense of place, ambiance of the park, and enjoyment of history.

Community benefits: Itasca's cultural resource management program contributes to opportunities for realization of several of the park's target community benefits (Table 5). However, those target community benefits most closely associated with the cultural resource management program are (a) providing a place to gain a greater understanding of the natural environment, (b) gain a greater concern for the natural environment, (c) increase community

pride, and (d) gain the feeling that the community is a special place to live. In addition, communities benefit from having opportunities to learn about their heritage and develop a deepening appreciation for cultural diversity.

Summary of Existing Cultural Resources

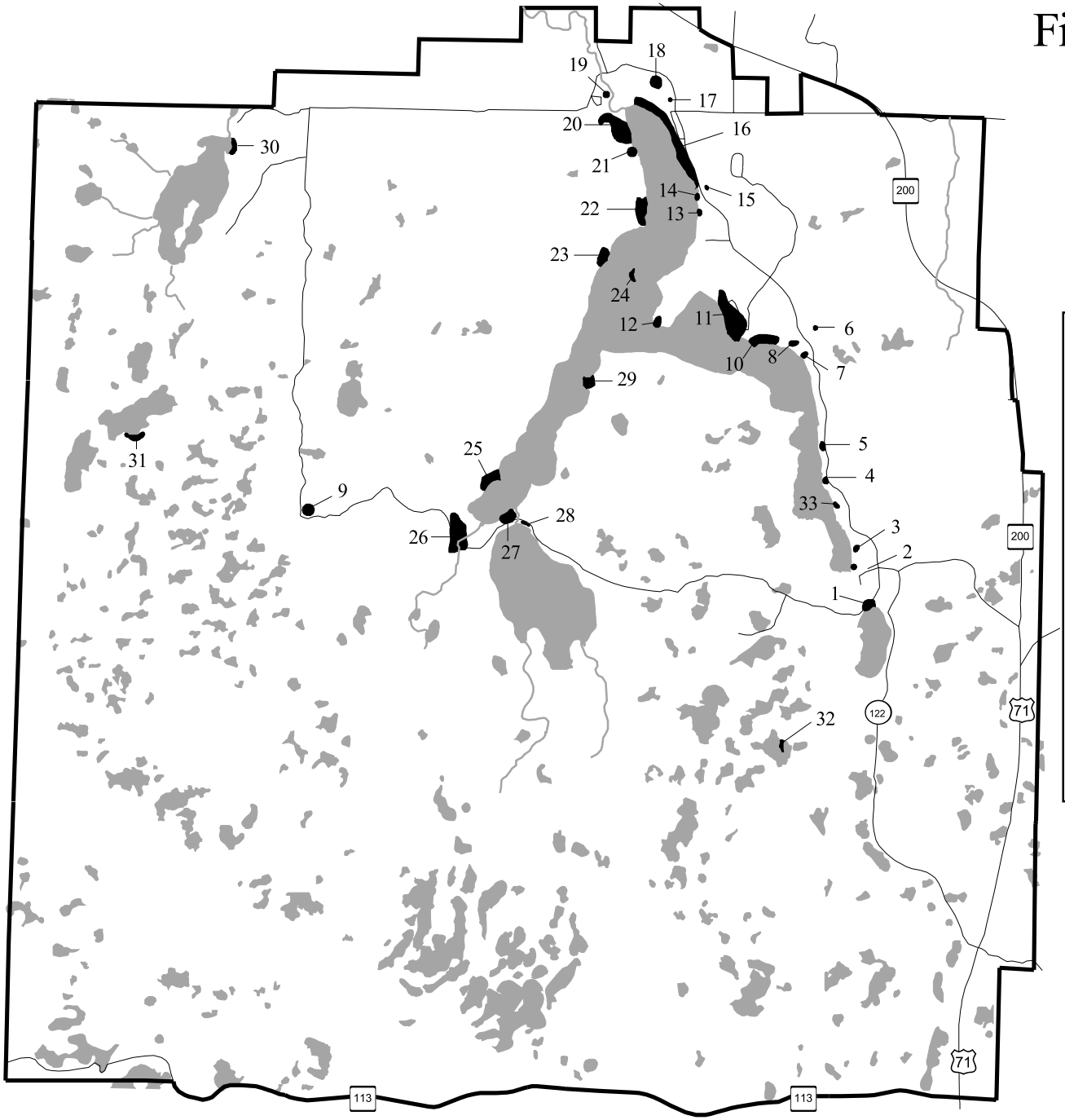
Itasca State Park is a significant cultural resource for both Minnesota and the nation. Presence of the Headwaters of the Mississippi River within the park makes it a national cultural and historic treasure. Itasca State Park is also the oldest state park in Minnesota and one of the oldest state parks in the nation. Archaeological survey work has documented human activity in the park as old as 8,000 years. Human activity in the park spans historical periods from the Early Eastern Archaic (8000 Before Present), through the Archaic 8000 - 2500 Before Present) and Woodland (2500 - 250 Before Present) periods to the present and includes American Indians, European explorers, Euroamerican settlers, loggers, early park development workers (1891 - 1932), Works Progress Administration/ Civilian Conservation Corps (WPA/ CCC) workers and present day visitors. Most of the park's documented archaeological sites relate to the early periods of human activity. Work camps and numerous park buildings were constructed in the 1930s - 1940s by the WPA/ CCC. Many of the WPA/ CCC structures still exist as functioning buildings within the park. Because of it's national cultural and historical significance, the entire park was designated as a National Historic District and placed on the National Register of Historic Places in 1973. The entire park is also listed on Minnesota's State Register of Historic Places (Radford and George, 1991). As such, the entire park is managed as a significant cultural resource.

Most of the known archaeological and historical resources are located in the Concentrated Use Zone (Zone 3) with some known sites in the Backcountry Zone (Zone 2). Management of these resources should be consistent with the resource management objectives established for these two zones. Most of the known sites are also located near the park's four major lakes, park facilities, or visitor use areas. Most of the archaeological survey work that has been completed in the park has been related to a facility development project. Additional sites are likely to exist in the large areas of the park that have not been surveyed.

Archaeological Resources

There are over 30 known archaeological and cemetery sites within Itasca State Park (Figure 13 and Table 14). Archaeological study of the park was begun in the late 1800s by Jacob Brower before the park was actually established and has continued into the present (Radford and George, 1991). The amount of archaeological exploration and documentation available for these sites varies depending upon the specific site. Brief descriptions of some of the park's most significant archaeological sites follow. More complete records, field notes, and documentation for these sites is available through the Minnesota Historical Society or Minnesota State Park staff.

Figure 13. Itasca State Park Archaeological & Cemetery Sites



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Roads

Itasca State Park Statutory Boundary

Lakes & Streams

Archaeological Sites
(See Table 14 for specific site information)

0.5 0 0.5 1 Mile

Source: Minnesota Historical Society, 1998

Table 14. Itasca State Park Archaeological and Cemetery Sites[1]

Figure 13 Site Number	Site Name	MHS Site Number
1	Mary Lake Access Site	21HB18
2	Douglas Lodge Cabin #4 Site	21CE26
3	Cabin #10 Site	21CE40
4	Park Drive Terrace Site	21CE54
5	Brower Trail #2 Site	21CE55
6	Bike Trail East Park Drive Find Spot	NA
7	Brower Trail Site	21CE56
8	Lake Itasca East Arm Site	21CE29
9	Middle West Patrol Cabin	NA
10	Bear Paw Access Site	21CE41
11	Bear Paw Campground Site	21CE27
12	Bear Paw Point Site	21CE34
13	Biology Station Site	21CE25
14	Pioneer Cemetery	21CE24
15	Pioneer Cemetery Parking Lot Find Spot	NA
16	Headwaters Site	21CE15
17	Wegmann's Store	NA
18	Itasca State Park Site	21CE16
19	Headwater's Pines Site	NA
20	Headwater's West Terrace Site	21CE39
21	Schoolcraft Trail Site	21CE35
22	Hill Point Site	21CE2
23	Unnamed Site	21CE7
24	Schoolcraft Island Site	21CE13
25	Garrison Point Site	21CE6
26	Itasca Bison Kill Site	21CE1
27	Chambers Creek Site	21CE3
28	Elk Lake Access Site	21CE23
29	Tamarack Point Site	21CE10
30	Lake Ozawindib Access Site	21CE22
31	North Twin Lake Logging Camp	NA
32	Myrtle Lake Historic Depression	NA
33	Preacher's Grove Terrace Site	21CE53

NA = Not Available

[1] Source: Minnesota Historical Society, 1998

Itasca Bison Kill Site (21CE1)

This is the oldest known archaeological site within the park and dates from the Early Eastern Archaic into the Woodland period. Located on Nicollet Creek near the southwestern shore of Lake Itasca, this site was discovered in 1937 during the construction of what is known today as Wilderness Drive. The original discovery included remains of bison, mammals, birds, fishes and

turtles, and several human-made artifacts. An initial excavation was conducted at the site by archaeologists from the University of Minnesota at that time. Additional excavation was conducted by archaeologists from the University of Minnesota in 1964 and 1965 (Shay, 1971). The combined excavation uncovered an extensive bed of bones from an extinct species of bison *(Bison occidentalis)* known to live in the upper Midwest following retreat of the glaciers. In addition, knives, spears, tools, and scrapers characteristic of those made by early American Indians from the Early Eastern Archaic period were discovered on the terrace above the creek. The lack of structural remains, the migration patterns of the particular bison species found at the site, the lack of young bison remains, and the nomadic nature of American Indians from this period all suggest that this was a seasonal site occupied during the fall and perhaps spring (Shay, 1971). Evidence also exists that tool manufacturing, meat preparation, and hide preparation took place on the site, indicating that encampments were established that lasted several weeks at a time (Shay, 1971). The extent of bison and other animal remains, and the extent of the human artifacts suggest that the site was used as a seasonal hunting area for a long period of time. Today, the site has been preserved and interpretive signs have been placed on site.

Itasca State Park Site (21CE16)

Located on the northeastern shore of Lake Itasca, this Woodland period cemetery site dates from approximately 800 - 900 years ago and consists of ten burial mounds. The site was originally discovered, and largely excavated by Jacob Brower in the late 1800s. The Office of the State Archaeologist in cooperation with the Minnesota Indians Affairs Council and the Minnesota Department of Natural Resources, conducted a project to rebury American Indian remains that had been removed from site during the late 1980s (Radford and George, 1990). This reburial project was part of a statewide effort to rebury several thousand individuals whose remains had been excavated or otherwise disturbed. The existing mounds are protected and a small walking trail has been constructed near the mounds to interpret their significance.

Headwaters Site (21CE15)

This large site is located on the northeast shore of the North Arm of Lake Itasca. Archaeological records for portions of this site date from Jacob Brower's work in the late 1800s and early 1900s. Brower identified a large village site with Archaic and Woodland components. He also documented the presence of a large shell heap near what is currently the Headwaters of the Mississippi River. Subsequent archaeological survey work has discovered additional materials from both the Archaic and Woodland periods at this site (Radford and George, 1990). Although significant portions of the Headwaters Site have been substantially modified by construction of trails, parking lots, and visitor service facilities, portions of the original site remain intact.

Headwater's West Terrace Site (21CE39)

This recent find is several hundred square meters in size is located on the western bank of the Mississippi River as it leaves Lake Itasca, was partially excavated and mitigated to allow for trail

construction in 1991 (Radford and George, 1991). The most recently recorded find in this area was in 1990 and 1991 when shovel testing to assess a proposed trail alignment uncovered ceramics, lithics, tools, fire-cracked rocks, and flakes from the Woodland period (Radford and George, 1990 and 1991).

Bear Paw Campground Site (21CE27)

This is a large site that consists of one large area located along the lower terrace of the westernmost portion of Bear Paw Campground adjacent to Lake Itasca and two smaller areas to the north and south of the larger area. The site was originally discovered in 1983 during survey work for an erosion control project (Streiff, 1983). Subsequent shovel tests in 1989 uncovered ceramic vessels, scraping tools, flakes, and other evidence indicative of the Late Woodland period (Radford and George, 1990). The site has been preserved and park facility construction has either been diverted around the site or mitigation measures have been taken to preserve the site intact.

Pioneer Cemetery (21CE24)

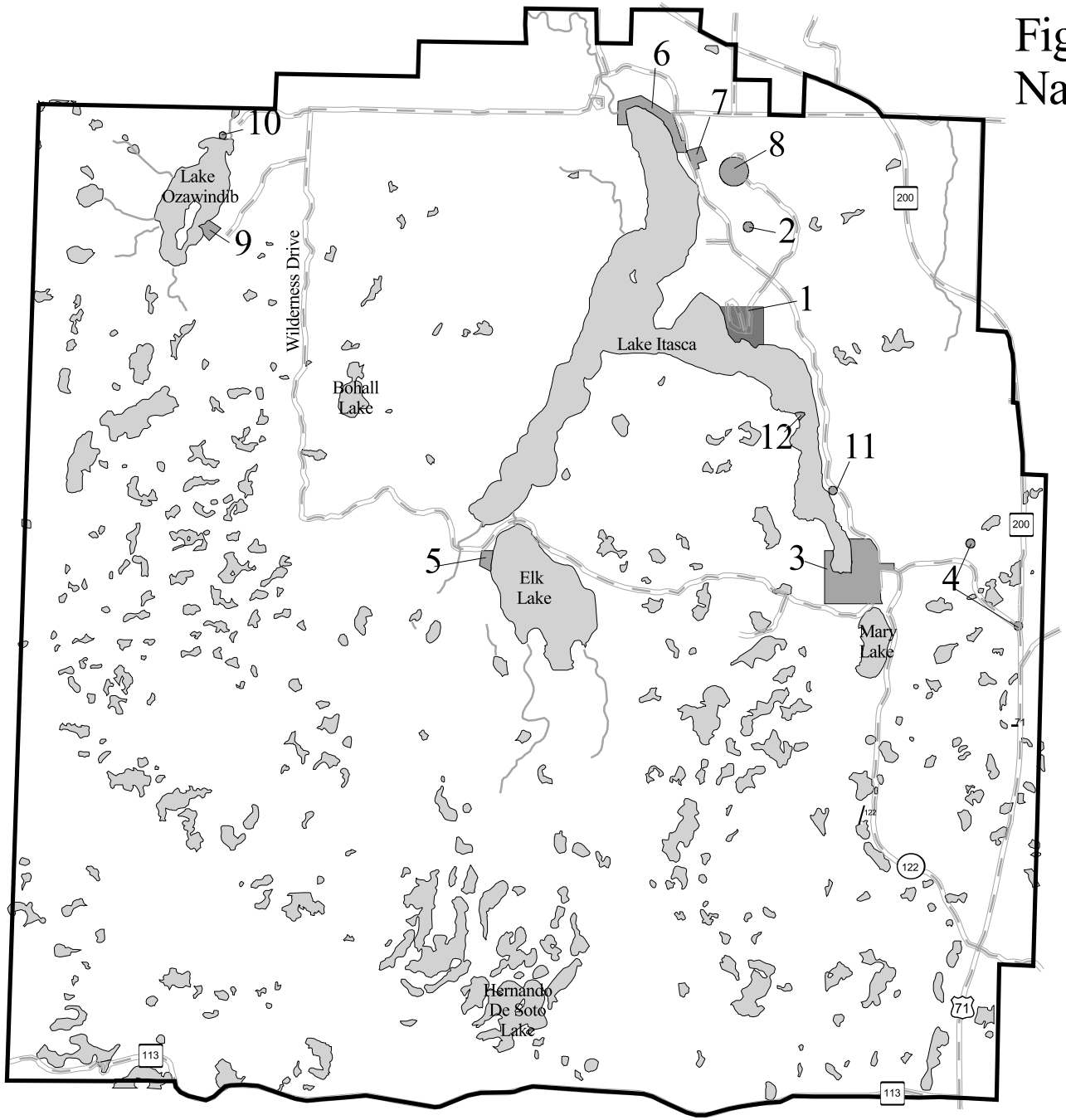
Located on the eastern shore of Lake Itasca, this is both a pre-Euroamerican habitation and Euroamerican cemetery site. The habitation site was first identified by Jacob Brower in the late 1800s (Radford and George, 1991). The Euroamerican cemetery was established as a burial site for early homesteaders in the area that would become Itasca State Park by William McMullen in 1889 (MHS, State Historic Preservation Office, 1973). The cemetery was closed to burials in 1936 and remains preserved.

In addition to these major sites, several smaller archaeological sites have also been discovered within the park (Figure 13). These include habitation sites such as the Chambers Creek Site and sites that indicate more transient activity such as the Preacher's Grove Terrace Site. Several of these sites were discovered during archaeological work conducted in the early 1990s along Brower Trail and the park's paved bicycle trail. The presence of these sites demonstrates the importance of these trail corridors and Lake Itasca to early human activity within the region. Additional records, field notes, and documentation for these sites is available through the Minnesota Historical Society or State Park staff.

Historical Resources

The entire boundary of Itasca State Park was designated as the boundary of the Itasca State Park Historic District on the National Register of Historic Places in 1973 (Figure 14). In addition to several of the park's archaeological and cemetery sites, 47 buildings, 30 structures, and one object (a plaque commemorating Robert Fechner, first director of the CCC program) were specifically identified as contributing elements to the Historic District designation by an amendment to the National Register listing in the late 1980s (MHS, State Historic Preservation Office, 1988). Many of the park's historical resources are built in the rustic style architecture found in national parks. Use of the rustic style architecture began in Itasca State Park with the 1905 Douglas Lodge and

Figure 14. Itasca State Park National Register Historic Areas



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National Register Historical Areas

1. Bear Paw Campground Historic Area
2. CCC Incinerator
3. Douglas Lodge Historic Area
4. East Entrance Historic Area
5. Elk Lake Transient Camp site
6. Headwaters Historic Area
7. Headquarters Historic Area
8. Lake Itasca CCC Camp site
9. Lake Ozawindib CCC Camp site
10. Lake Ozawindib Cabin
11. Preachers Grove Historic Area
12. Turnbull Point Trail Shelter

Itasca State Park Historic District

Roads

Lakes & Streams

0.5 0 0.5 1 Miles

Source: DNR, Division of Parks and Recreation, 1997

Table 15. Contributing Historical Elements within Itasca State Park's Historical Areas

Historic Area (Figure 14)	Contributing Historical Elements	Cultural Period	
		E	W/C
Bear Paw Campground Historic Area	Campground Registration Bldg		x
	Campground Registration Bldg Stone Curb		x
	Pump House		x
	Cabins 1-3 and 4-6		x
	Pump House		x
	Bear Paw Campground Stone Steps		x
	Comfort Station		x
	Drinking Fountains (2)		x
	Combination Building		x
	Ice & Wood House		x
Douglas Lodge Historic Area	East Contact Station		x
	East Contact Station Drinking Fountain		x
	Douglas Lodge	x	
	Douglas Lodge Cellar	x	
	Douglas Lodge Stairway		x
	Nicollet Court	x	
	Dormitory	x	
	Clubhouse	x	
	Old Timer's Cabin		x
	Forest Inn		x
	Latrine		x
	Forest Inn Parking Lot Stone Curb		x
	Forest Inn Parking Lot Drinking Fountain		x
	Multiple Cabin (4-plex)		x
	Cabins #5, 6, 7, 8, 9, 10, & 11	x	
	Cabin #12		x
	Pump House		x
East Entrance Historic Area	Entrance Portals		x
	Entrance Pylon		x
Headwaters Historic Area	Drinking Fountain		x
	Bath House & Shelter		x
	Drinking Fountains near Bath House		x
	Brower Inn Stone Steps		x
	Museum	x	
	Foot Bridge		x
	Pageant Grounds Latrine		x
	Water Tower		x
	Concession Building		x
	Mississippi Headwaters Dam		x

Key: **E**=Park Establishment (1891-1932), **W/C**=WPA/CCC Era (1933-1942).

Table 15. Contributing Historical Elements within Itasca State Park's Historical Areas (Continued)

Historic Area (Figure 14)	Contributing Historical Elements	Cultural Period	
		E	W/C
Headquarters Historic Area	Old Park Headquarters	x	
	Water Tower (3 story)	x	
	Headquarters Building		x
	Headquarters Bldg Parking Lot Stone Curb		x
	Superintendent's Residence		x
	Superintendent's Garage		x
	Power House		x
	Warehouse		x
Preachers Grove Historic Area	Retaining Wall		x

Key: **E**=Park Establishment (1891-1932), **W/C**=WPA/CCC Era (1933-1942).

continued through the WPA/ CCC era of the 1930s and 1940s. Structures built at Itasca State Park in this style include stone and log structures (e.g., Forest Inn), stone structures (e.g., drinking fountains and curbs), and log structures (e.g., Douglas Lodge).

Many of Itasca's contributing elements are clustered into one of several historic areas that represent rustic style park facilities built for visitor use. The park's historic areas are named the (a) Douglas Lodge Historic Area, (b) Bear Paw Campground Historic Area, (c) East Entrance Historic Area, (d) Headwaters Historic Area, (e) Headquarters Historic Area, and (f) Preacher's Grove Historic Area (Figure 14). Table 15 lists the contributing elements found within each of these historic areas.

In addition to the contributing elements found within these historic areas, some contributing elements are individual structures (a CCC incinerator, the Lake Ozawindib Cabin, and the Turnbull Point Trail Shelter) that are not identified with a particular historic area (Figure 14). Finally, three WPA/CCC era camp sites (Elk Lake Transient Camp, Lake Ozawindib Transient Camp, and Lake Itasca CCC Camp) contain some of the contributing elements to the National Register listing (Figure 14). Collectively, the contributing historical elements represent human activities from the early European settlement of the area to the 1940s.

The park also contains some historic resources that are not specifically identified as contributing structures in the National Register listing. Among these are the DeSoto Cabin, Green Cabin, Nicollet Cabin, Peace Pipe Vista overlook, Middle West Cabin Site, and the remains of the former Wegmann's Cabin. Post-1940s construction in the park has also co-mingled other buildings and structures with the historic resources to provide additional visitor services within the historic areas.

Cultural Landscapes

One component of a comprehensive cultural resource management program for Itasca State Park is consideration of the cultural landscapes found within the park. Birnbaum (1995) provides a synopsis of the National Park Service guidelines for managing cultural landscapes. He defines a cultural landscape as "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values." Application of this definition suggests a need to consider the spatial organization and patterns of the landscape (e.g., relationships between buildings and fences) and the character defining features of the landscapes (i.e., topography; vegetation; vistas; circulation patterns; aesthetic/ functioning water features; and structures, site furnishings and objects) associated with specific cultural resources (USDI, National Park Service, 1996). Consideration should also be given to how a landscape has changed over time and the role that the specific resources played in defining the landscape. In effect, specific cultural resources are treated within the context of the natural surroundings and as part of a whole story that links past use to present use, rather than as island-like monuments to the past.

Management of cultural landscapes is a relatively new endeavor for Minnesota State Parks that presents some challenges for management of Itasca State Park's cultural resources. The original National Register nomination and its 1988 amendment focus on specific sites. This documentation does not provide much assistance in evaluating the cultural landscapes within which the resources are located. For example, the structures found within the Bear Paw Campground Historic Area are listed on the National Register as individual contributing elements without discussion of how they relate to each other or how they relate to the vegetation, walkways, and vehicle access routes within the campground. Similarly, many of Itasca's historic areas contain cultural resources from more than one period of time. The presence of multiple contributing elements within each of the park's historical areas provides support for the observation that several different cultural landscapes likely exist within the park.

Several of the park's historical areas also contain cultural resources from more than one historical period. One factor in describing cultural landscapes is determining the historical period(s) represented by a given landscape. At least five different historical periods identified by park staff that are represented by the park's cultural resources. These periods are: (a) the pre-European settlement (pre-1850); (b) settlement (1850 - 1891); (c) park establishment (1891 - 1932); (d) Works Progress Administration/ Civilian Conservation Corps (1933 - 1942); and (e) Post - WPA/ CCC (1942 - present).

Other cultural landscapes within the park include traditional use areas. A traditional use area is a location which has been historically used by one or more groups of people for some type of activity, very often related to vegetation of the area. Examples of traditional use areas include wild rice beds, berry gathering areas, and locations where plant materials were gathered for craftwork or medicinal purposes. Good documentation of the traditional use areas within the park is lacking.

Finally, some of the park's cultural resources stand as individual elements in a landscape largely dominated by natural resources rather than evidence of human activity (e.g., the east entrance portals). Landscapes characterized by individual elements of human activity might be described differently than landscapes characterized by several examples of human cultural interaction with a landscape exist.

Recommendations and Actions

Itasca State Park's cultural resource management program should focus on attainment of the cultural resource management goals and target benefits identified earlier in this chapter and realization of the vision and missions statements in Chapter 1. Cultural resource management actions should adhere to the management zoning concepts presented in Chapter 3, applicable state and federal laws, and be consistent with the park's overall target benefits identified in Chapter 3. Within this context, cultural resource management activities undertaken to implement the following recommendations should be tailored to the management zone where they will occur according to the general resource management guidelines for each zone presented in Chapters 3 and 4.

Although the existing cultural resource management program generally reflects the program goals outlined earlier in the chapter and the management zone delineations found in Chapter 3, some improvements are recommended. Program improvement requires increased funding to support cultural resource management activities and continued cooperation between MNDNR staff and other agencies, such as the Minnesota Historical Society.

The recommendations and management actions that follow are intended to provide a general direction for cultural resource management activities in the park. Annual work planning meetings will use these recommendations to determine short-term goals, priorities, and actions. Many of the management actions listed below are, therefore fairly broad and will become more specific through the work planning process.

Recommendation: Continue to identify, document, and preserve Itasca State Park's archaeological resources.

Discussion: Itasca State Park contains some of the most significant cultural resources found in the State of Minnesota. Sites such as the Itasca Bison Kill Site and the Headwaters Site document and describe human activity in the area over several thousands of years. These major archaeological finds have helped establish the importance of the park nationally. Although a great deal of archaeological research has been conducted in Itasca in the last century, much of the work has focused on the areas surrounding the four major lakes within the park, the Headwaters of the Mississippi, and other areas of the park where significant facility development has occurred. Much of the park's 32,000 acres remains unstudied.

In addition, as facilities are provided for visitor enjoyment of the park and basic park infrastructure is maintained, a need exists to continue archaeological survey work at potential construction sites. The importance of continued work in this area is underscored by the number and extent of the archaeological sites that have already been discovered in the park during recent surveys for construction or maintenance projects.

Finally, the park's archaeological resources offer windows to the past and opportunities to tell the Itasca story that are important components of the park's interpretive and environmental education program. Continued work to understand and interpret the park's archaeological resources is important.

Actions to Implement Recommendation:

A. Continue to protect and preserve the park's archaeological and cemetery resources;

B. Complete a parkwide archaeological survey to identify and describe the park's archaeological resources. Priority should be given to existing use areas such as the Concentrated Use Zone that have not been inventoried;

C. Continue to contract with the Minnesota Historical Society for archaeological surveys associated with park facility modification projects as required by the Field Archaeology Act and Historic Sites Act;

D. Work with interpretive services and environmental education staff and the MHS to develop interpretive and education materials related to the park's archaeological resources;

E. Work with park staff to ensure that archaeological resource management is integrated with other resource, recreation, facility, and visitor management programs in the park.

F. Work with the White Earth Reservation and other Tribal governments to develop American Indian history interpretive materials; and

G. Work with the White Earth Reservation and other Tribal governments to document traditional use areas within the park.

<u>Recommendation</u>: Continue to preserve, protect, and interpret Itasca State Park's historical resources.

<u>Discussion</u>: Itasca State Park contains some of the most significant historical resources found in the State of Minnesota. Sites such as Douglas Lodge are among the first rustic style buildings constructed in parks nationwide. Others, such as Preacher's Grove, the Headwaters of the Mississippi, and the Old Timer's Cabin bring visitors from around the country to see a piece of our

past. Still others, such as Bear Paw Campground and the WPA/ CCC camp sites document an important chapter in American history as it relates to Minnesota. Efforts have been strong in recent years to restore and maintain the historical integrity of these important resources. Yet, some rehabilitation and maintenance is needed beyond the funds that have been made available for cultural resource protection.

In addition, as facilities are provided for visitor enjoyment of the park and basic park infrastructure is maintained, a need exists to design new facilities that complement rather than detract from or conflict with existing historical resources. Finally, the park's historical resources offer windows to the past and opportunities to tell the Itasca story that are important components of the park's interpretive and environmental education program. Continued work to understand and interpret the park's historical resources is important.

Actions to Implement Recommendation:

A. Continue to protect, preserve, and rehabilitate the park's historical resources;

B. Continue to contract with the Minnesota Historical Society for historical site surveys associated with park facility modification projects as required by the Field Archaeology Act and Historic Sites Act;

C. Whenever possible, work with National Park Service, MHS, and MNDNR Bureau of Engineering staff to identify appropriate preservation, restoration, and rehabilitation techniques for managing the park's historical resources;

D. Continue to work with the MHS to collect and archive important documents, photos, and other historical resources that describe the park and the area's history;

E. Work with interpretive services and environmental education staff and the MHS to develop interpretive and education materials related to the park's historical resources and their role in describing our past;

F. Work with park staff to ensure that historical resource management is integrated with other resource, recreation, facility, and visitor management programs in the park;

G. Develop and fund a cyclical maintenance program for historic buildings;

H. Identify and restore, as appropriate, historic building elements that have deteriorated or have been removed in the past as recommended in Chapter 9. Continue to conduct building restoration workshops in the park; and

I. Cooperate with the neighboring White Earth Reservation and other Tribal governments to develop American Indian interpretive materials and management guidelines for American Indian sites and traditional use areas as recommended in Chapter 7.

Recommendation: Identify, preserve, protect and interpret Itasca State Park's cultural landscapes.

Discussion: The presence of historical areas within the park that contain multiple elements suggests that Itasca contains significant cultural landscapes. Recent efforts to restore and maintain the historical integrity of the park's important cultural resources have focused on individual archaeological sites or historical structures. A need exists to step back from the specific sites and structures and seek to understand how they relate to each other and the natural environment to form significant landscapes. For example, the Douglas Lodge building is significant both as a single building and as part of the Douglas Lodge Historic Area's landscape.

Lack of adequate descriptions of Itasca's cultural landscapes and limited state park staff experience at managing for cultural landscapes raises some challenging questions associated with implementation of cultural landscape management at the park. Among these questions are: (a) What are the boundaries of an individual landscape? (b) How are areas that contain resources from more than one period of time described in terms of their cultural landscape? (c) How are natural and human landscape changes incorporated into the management regime in such a way that both natural and cultural resource integrity are maintained? (d) How do management goals for particular cultural landscapes correspond with a given management zone's resource and recreation management goals?

In addition, as facilities are provided for visitor enjoyment of the park and basic park infrastructure is maintained, a need exists to design new facilities that complement rather than detract from the significant cultural landscapes. Cultural landscapes also offer opportunities for visitors to experience the aesthetic qualities or sense of place associated with an area as it has changed over time. Finally, the park's cultural landscapes offer opportunities to tell the Itasca story through the park's interpretive and environmental education program.

Actions to Implement Recommendation:

A. Work with MHS staff to identify and describe the park's significant cultural landscapes;

B. Work with MHS staff to protect, preserve, and restore the park's significant cultural landscapes;

C. Work with National Park Service, MHS and MNDNR Bureau of Engineering staff to identify appropriate preservation, restoration, and rehabilitation techniques for managing the park's significant cultural landscapes;

D. Work with interpretive services and environmental education staff and the MHS to develop interpretive and education materials related to the park's cultural landscapes and their role in describing and experiencing our past; and

E. Work with other park staff to ensure that management decisions consider impacts on the park's significant cultural landscapes.

Research and Monitoring

Periodic research and monitoring of Itasca State Park's cultural resources is important to learning about those resources, the effectiveness of preservation efforts, the health of the resources, and efforts to implement the recommendations contained in this chapter. Although archaeological and historical research exists on some of the specific sites within the park, a comprehensive archaeological survey has not been completed and new information regarding the park's historical resources is periodically discovered. In addition, the knowledge base for how to effectively manage cultural resources continues to expand and federal guidelines governing the management of cultural resources continue to evolve. Baseline data on existing conditions of these resources is needed to establish an effective research and monitoring program. In addition, research evaluating the impact of specific management techniques, human impacts on the resource, and changes in resource health caused by natural or human phenomena is periodically needed. Continued research on the benefits attained from the park's cultural resources is also necessary to monitor and evaluate the cultural resource management program's effectiveness at managing for the particular set of experiences and benefits associated with those resources.

Clear, specific, quantifiable, and measurable management objectives should be developed for the cultural resource management program to aid in monitoring and evaluating cultural resource health and the effectiveness of particular cultural resource management actions taken in the park. Standards and indicators for individual cultural resources and landscape health should be developed to provide specific measures for monitoring and evaluation. Similar objectives, standards, and indicators should be established for measuring the program's effectiveness at realizing its target benefits. Appropriate modifications in management techniques and direction should be made based on research results.

Chapter 6. Recreation Resource Management

Introduction

Itasca State Park provides a range of recreational opportunities that include day use and overnight (camping and lodging) opportunities. Although availability of specific opportunities varies seasonally, the park attracts visitors year round. Visitors repeatedly report high levels of satisfaction with their visits to the park (Nickerson, 1998; Nickerson, et. al, 1997).

This chapter summarizes some of the park's major opportunities and presents recommendations for future recreation resource management actions within the park. The chapter begins with a section which outlines the park's recreation resource management goals. The next section of the chapter identifies the target benefits associated with recreation management in the park. The middle section presents an inventory and description of the park's major recreational opportunities. A section near the end of the chapter lists the major recreation resource management recommendations and actions to accomplish the program goals and provide opportunities for realization of the target benefits. The chapter ends with a section on research and monitoring.

Recreation Resource Management Goals

The following goals have been identified to guide recreation resource management activities at Itasca State Park:

- Provide a range of recreational opportunities for visitors to enjoy the natural environment;
- Provide recreational opportunities that minimize human impacts on the park's natural and cultural resources;
- Provide visitors with opportunities to venture into undeveloped areas of the park to realize their desired experiences and benefits;
- Provide visitors with opportunities to attain the experiences and benefits associated with developed areas of the park;
- Provide facilities for the safe use and enjoyment of the park; and
- Develop an ongoing research and monitoring program.

Although these goals should guide recreation resource management activities throughout the park, translation of the goals into specific management actions will differ to some extent by management

zone and the specific recreational resources in question. The zone descriptions, guidelines, and target benefits presented in the management zoning chapter will aid in selecting specific recreation resource management actions for each management zone. In addition, continued cooperation with other providers, natural resource management agencies, and research institutions will be necessary.

Target Benefits

Itasca State Park offers a variety of opportunities to attain the park's target benefits. A more thorough discussion of the park's target benefits is presented in the management zoning chapter than is found in this chapter. However, the park's target benefits that are most relevant to the park's recreation management activities among the visitor, community, environmental, and economic benefit types are presented below.

Visitor benefits: The park's nine target visitor benefits are all directly related to the recreational opportunities available to visitors (Table 4). Among these are (a) enjoy nature and friends, (b) learning, (c) solitude and escape, and (d) family bonding. The quality of the visitor experiences and the degree to which visitors are able to attain their desired benefits is inextricably linked to the recreational facilities and natural environment found within the park. This group of target benefits is arguably the principal focus of recreation management actions within the park.

Community benefits: The recreation management program also provides opportunities for attainment of many of the park's target community benefits (Table 5). However, those target community benefits most closely associated with recreation resource management activities are (a) providing a place to experience unique recreation opportunities, (b) a place to gain a sense of security that the natural environment will not be lost, a place to attract tourism to the area, (d) a source of community pride, and (e) a place to gain a greater understanding of the natural environment.

Environmental benefits: Although the park's target environmental benefits are more directly associated with the resource management and interpretive programs than the recreation management program, the recreation management program does aid in providing opportunities to attain all five of the park's target environmental benefits to varying degrees (Table 7). These are (a) environmental stewardship and preservation, (b) understanding human dependency on the environment, (c) a place to enhance environmental ethics, (d) increased awareness of environmental issues, and (e) environmental protection.

Economic benefits: Itasca's recreation management program contributes indirectly to many of the park's target economic benefits and directly to other target economic benefits (Table 6). Those target economic benefits that the recreation management

program is most directly related to are (a) employment opportunities for local citizens, (b) local and regional economic growth, (c) assistance to the net national economic development, and (d) assistance to the international balance of trade.

Summary of Existing Recreation Resources

The recreational opportunities provided at Itasca State Park are diverse and dispersed throughout the park's 32,000 acres. The park's SNA Zone (Zone 1) offers visitors opportunities to hike, walk, observe wildlife, or sit and enjoy a quiet sunrise or the sounds of birds singing in the trees. The Backcountry Zone (Zone 2) affords visitors the opportunities to hike, walk, picnic, backpack camp, recreate on the water, observe wildllife, hunt during the park's special hunts, or enjoy the quiet of a star filled sky against an open campfire. And, the Concentrated Use Zone (Zone 3) offers visitors opportunities to bicycle, hike, walk, camp along the shores of Lake Itasca, walk across the headwaters of one of the world's greatest waterways, participate in an evening interpretive program, observe wildlife, hunt during the park's special hunts, or simply relax in the quiet of their camper after a long day exploring the park's interior.

The types of facilities available for visitors also vary between the park's three management zones. In Zone 1, only minimal hiking trails exist to maintain a largely undisturbed natural environment and offer visitors opportunities for the benefits associated with such an environment. Zone 2 facilities include Wilderness Drive, some parking lots, interpretive signs, and pit toilets along the edge of the zone. In the interior of Zone 2, only hiking trails, fire pits for campfires, and backpack campsites exist. Zone 3 offers visitors campgrounds with electrical sites and shower buildings and day use areas that include a paved bicycle trail, picnic ground, swimming beach, interpretive buildings, and hiking trails to create a more modified environment complete with roads and visible visitor services. Zone 3 also contains the park's resort operation that includes the food and lodging services described in Chapter 8 (Resort Operations).

Winter opportunities also exist in all three zones. In the SNA (Zone 1), winter access is available via cross-country ski or snowshoe. In the Backcountry (Zone 2), access is possible on cross-country ski, snowshoes or snowmobiles. In the Concentrated Use Zone (Zone 3), the main park drive is plowed for automobiles, a snowmobile trail begins at the picnic area parking lot and cross-country skiing, snowshoeing exist. Groomed cross-country ski, snowshoe and snowmobile trails are provided in the Backcountry and Concentrated Use Zones (Zones 2 and 3) but not in the SNA Zone (Zone 1). Winter fishing and camping opportunities are also available in the Concentrated Use and Backcountry Zones during the winter months.

Given this breadth and depth of recreation opportunities, it is impossible to inventory all of the opportunities that exist in the park. As such, opportunities have been grouped into six general categories for purposes of this management plan. These categories are general day use, trail recreation, water recreation, camping and group camps, the park's hostel, and concessionaires. A brief description of the types of recreational opportunities that might be found in each of these

categories follows. In addition, recreational opportunities that exist through the park's interpretive program are discussed in the interpretive and environmental education chapter (Chapter 7). Similarly, recreational opportunities provided by the park's resort operation (i.e., Douglas Lodge, the rental cabins and the gift shops) are addressed separately in the resort operations chapter (Chapter 8).

Figure 15 displays the major recreational facilities made available for visitor use during the summer season. Although many of these facilities are closed for the winter, some remain open year round (e.g., Forest Inn, some trails, and park administrative offices).

General Day Use

Approximately four-fifths of Itasca's annual visitors are day users. Many of these visitors are also return visitors to the park. The park provides facilities for many day use activities such as picnicking, swimming, hiking, walking, visiting the Headwaters of the Mississippi River, interpretive programming, fishing and boating (Figure 15). The park's visitors partake in many of these opportunities for short periods of time each and repeatedly report a few activities as most satisfying.

Recent visitor survey research asked visitors to indicate which activities they engaged in during their visit and to identify which of those activities were most satisfying to their visit. More than 50 percent of the respondents to this survey indicated that they engaged in one or more of the following activities: (a) viewing the Headwaters of the Mississippi, (b) sight-seeing, (c) driving for pleasure, (d) walking, (e) shopping at the gift shops, (f) visiting Forest Inn, (g) viewing historical resources, (h) watching wildlife, (i) visiting museums, (j) looking at wildflowers, and (k) viewing cultural resources. Other activities that were popular among respondents were (a) photography, (b) eating at Douglas Lodge, (c) hiking, (d) nature study, (e) picnicking, (f) reading for pleasure, and (g) wading. When asked how much time they spent engaged in these activities, visitors generally indicated that they participated in individual activities for 4 hours or less (Nickerson, et al., 1997).

Visitors have indicated that viewing the Headwaters of the Mississippi River, bicycle touring, sight-seeing, hiking and walking are among their most satisfying activities (Nickerson, et al., 1997). Other activities that were frequently reported as most satisfying were driving for pleasure and camping (Nickerson, 1998).

Trail Recreation

Although much of the park's day use occurs within the Concentrated Use Zone and along Wilderness Drive, day users find their way into the interior of the park as well. Access to interior areas is through the park's extensive trail system. Almost 25 different summer trails exist within the park. These range in length from the 600 foot Headwaters Trail to several mile long loops in the Backcountry Zone (Figure 16). Although trails exist in all three of the park's management zones, the majority of the park's trails are within the Backcountry Zone (Zone 2). Itasca offers a total of 33

Figure 15. Itasca State Park Existing Facilities

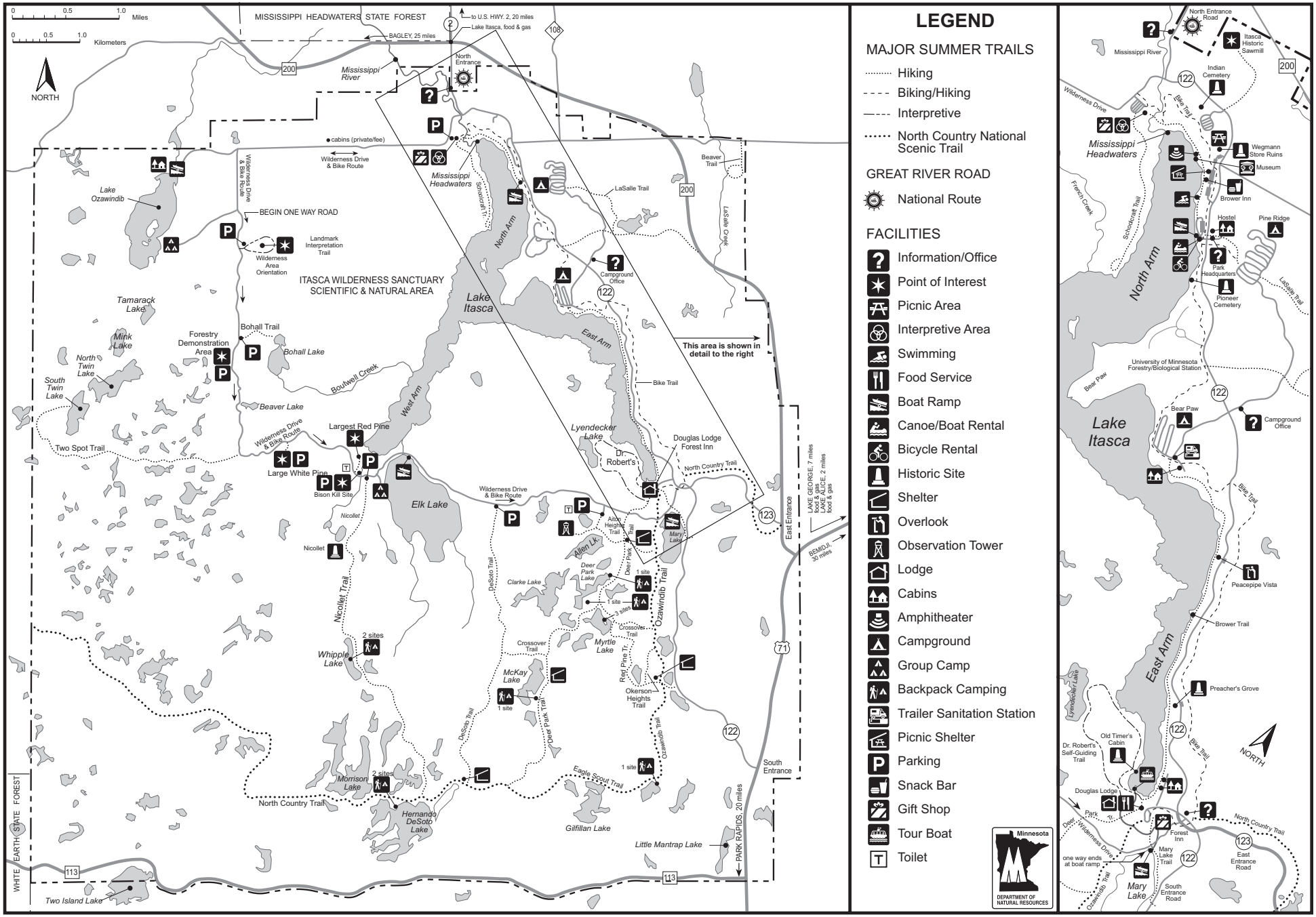
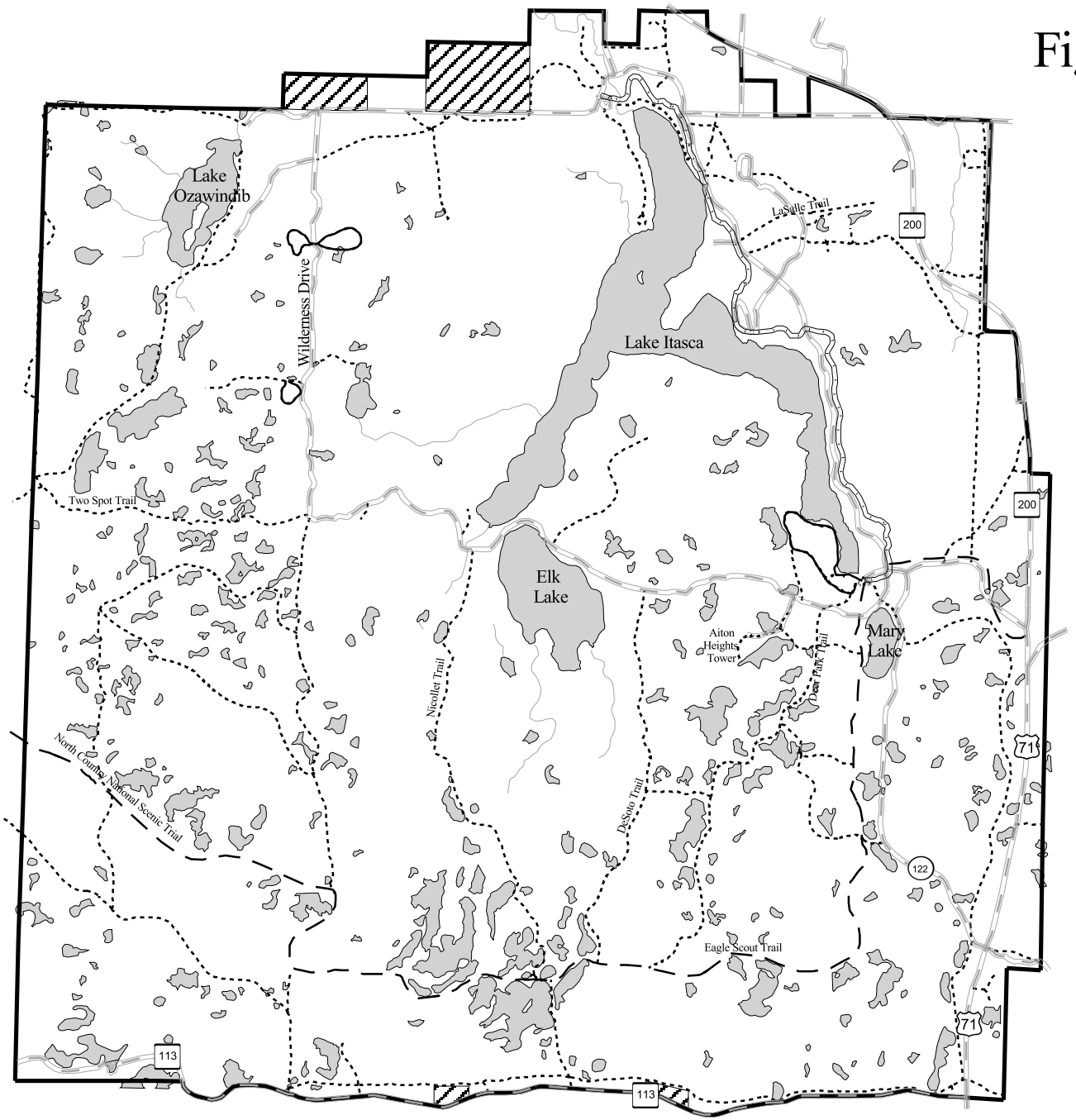


Figure 16. Itasca State Park Existing Summer Trails



Legend

N

Existing Summer Trails

- Biking/Hiking Trails
- Hiking Trails
- Interpetive Trail
- North Country National Scenic Trail

- Roads
- Itasca State Park Statutory Boundary
- Lakes & Streams
- Private & County Ownership

0.5 0 0.5 1 Mile

Source: DNR, Division of Parks and Recreation, 1997

miles of designated hiking trails, 16 miles of paved bike trail (including Wilderness Drive), and several miles of self-guided interpretive trails. Many of these trails provide access to the park's major attractions and facilities and connect many areas of the park to each other.

The trails accommodate a variety of interests from the visitor who wishes a short walk to the Headwaters of the Mississippi to the visitor who wishes to spend several hours or longer enjoying the trail system in the Backcountry or the five mile hike from Douglas Lodge to the Mississippi Headwaters. A segment of the North Country National Scenic Trail is among the park's hiking trails. Although less than half of the 3,200 mile North Country National Scenic Trail has been completed, visitors will eventually be able to hike from New York's Adirondack Mountains to the banks of the Missouri River in North Dakota. In addition, the bicycle enthusiast can enjoy a short ride from the campground to the Headwaters or Douglas Lodge or experience the entire 16 mile loop around Wilderness Drive. The park's summer trails also offer a variety of surfaces from the unpaved hiking trails found in all three zones to the paved bicycle trail found in the Concentrated Use Zone and along Wilderness Drive.

Winter trail opportunities also exist at Itasca. Approximately 32 miles (45 kilometers) of the park's summer trails are groomed for cross-country skiing during the winter months (Figure 17). This network of cross-country ski trails can accommodate a range of skiing abilities from easy to very difficult and skiers from those who want a short ski along a portion of Wilderness Drive or to Aiton Heights Fire Tower to those who would prefer a longer ski along Nicollet Trail. Dr. Robert's, Brower, Schoolcraft, portions of the North Country National Scenic Trail, and portions of LaSalle Trails are designated for snowshoeing and hiking during the winter months. Winter visitors can also snowshoe or cross-country ski through the woods.

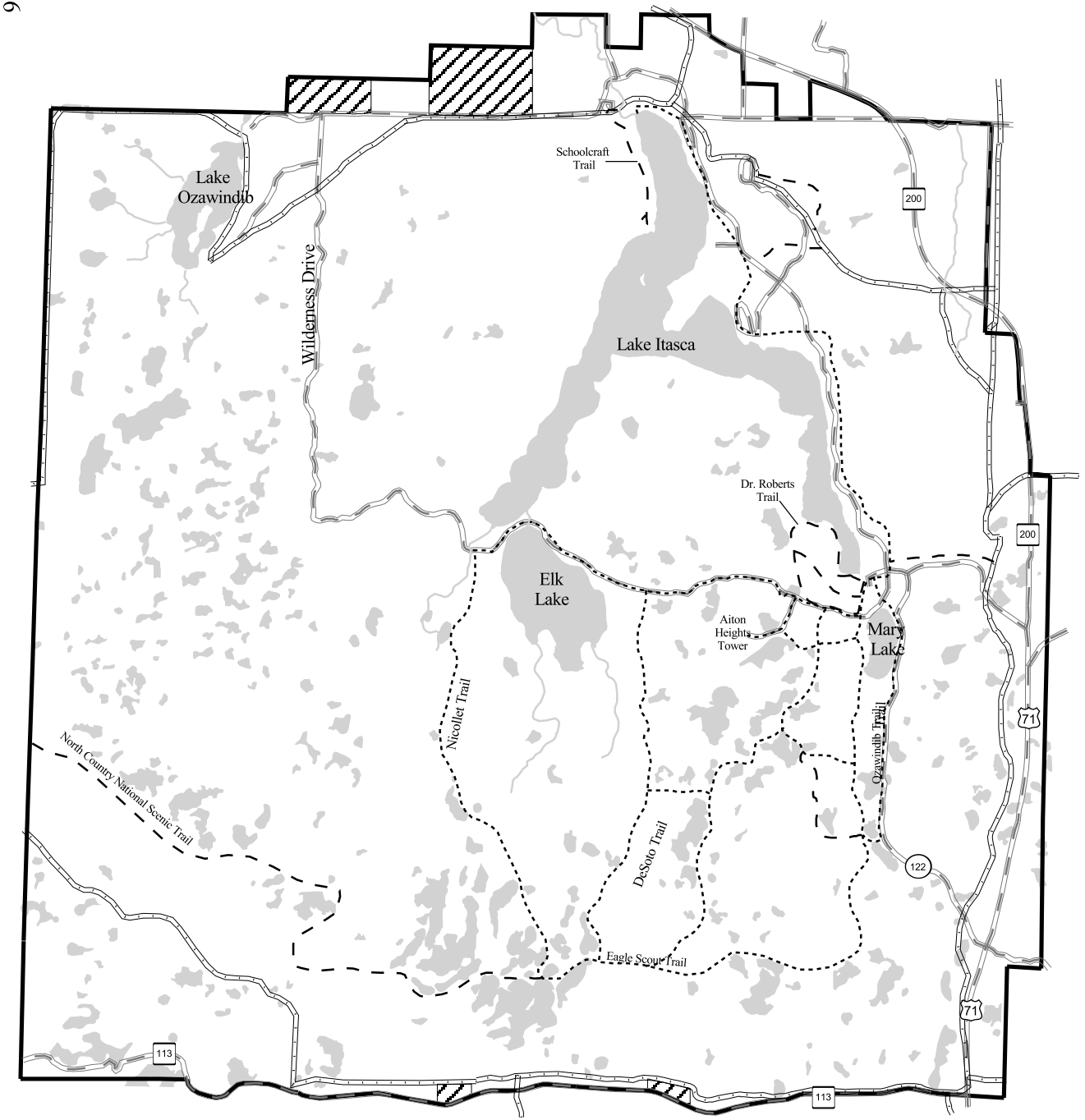
In addition, approximately 30 miles of trail within the park are groomed for snowmobiles. Although access to the snowmobile trails is possible from the picnic ground parking lot, most of the park's snowmobilers enter the park from the network of trails that exists outside the park. Itasca's snowmobile trails form critical links in the network of groomed snowmobile trails found outside the park. Most of the park's snowmobile trail system also parallels the park boundary and does not enter the interior where cross-country ski, snowshoe, and hiking trails are found.

Although Forest Inn is currently used as a winter trail center, use of the facility for this purpose causes some maintenance difficulties ranging from high heating costs to potential structural impacts associated with using a nonwinterized building in the winter. The Forest Inn parking lot is also plowed during the winter to provide visitor parking. This area of the park is the most common access point to the park's cross-country ski, snowshoe, and hiking trail system.

Water Recreation

Opportunities for water recreation in Itasca are abundant and diverse. These opportunities exist throughout the Backcountry and Concentrated Use Zones. Swimming, fishing, and boating are not allowed in the park's SNA (Zone 1) in accordance with Minnesota State Law which prohibits use of waters in state designated Scientific and Natural Areas for these purposes.

Figure 17. Itasca State Park Existing Winter Trails



Legend

N

- Snowshoe Trails
- Cross Country Ski Trails
- Snowmobile Trails
- Roads
- Itasca State Park Statutory Park Boundary
- Lakes & Streams
- Private & County Ownership

0.5 0 0.5 1 Mile

Source: DNR, Division of Parks and Recreation, 1997

Developed public accesses exist on the park's four major lakes (Itasca, Elk, Mary and Ozawindib). Both motorized and non-motorized boats use these accesses. A tour boat also operates on Lake Itasca providing interpretive tours of the lake. Although motorized recreation is not prohibited on waterbodies in the Concentrated Use and Backcountry Zones, Minnesota State Park Rules establish a 10 mph speed limit for all watercraft on water bodies within state parks. Fishing and sight-seeing are among the most popular boating activities occurring within the park.

Canoe, motorboat, and pontoon rentals are also available on the park's four major lakes (Itasca, Elk, Mary, and Ozawindib). In addition to the developed accesses, most of the park's lakes and streams are only accessible from hiking trails. Visitors do portage canoes and kayaks into these lakes. Visitors also are able to launch a canoe or kayak at the Headwaters of the Mississippi and enjoy canoeing Lake Itasca's shoreline, a longer paddle to Schoolcraft Island, or a journey north on the Mississippi River as it leaves the park.

In addition to boating opportunities, a swimming beach and a fishing pier exist on Lake Itasca (Figure 15). Shore fishing opportunities are also available in the Backcountry Zone. Ice fishing also occurs on the park's lakes during the winter months.

Camping and Group Camps

Camping opportunities exist in both the Concentrated Use and Backcountry Zones (Zones 3 and 2, respectively). Camping is prohibited in the park's SNA (Zone 1) by Minnesota State Law governing allowable uses within state designated Scientific and Natural Areas. The park offers two developed campgrounds in the Concentrated Use Zone. Bear Paw Campground is the park's oldest campground. This campground is located on the Lake Itasca shoreline and offers 70 drive-in sites, 11 walk-in sites, several electrical hookups, flush and pit toilets, shower facilities, and a trailer dump station. Bear Paw Campground also contains six rental cabins that are operated as part of the Douglas Lodge Resort Complex (See Chapter 8).

Pine Ridge Campground is set back from Lake Itasca and Main Park Drive and located along the eastern side of Lake Itasca. This campground is larger than Bear Paw and offers 158 drive-in sites, 65 electrical hookups, pit and flush toilets, and shower facilities. Although shower and flush toilet facilities exist in this campground, they are not adequate to meet the demand that was created when additional camping loops were recently added with no additional shower and flush toilet facilities. A spur from the park's bike trail is available from Pine Ridge Campground to provide easy bicycle and foot access to Lake Itasca and the park's picnic area, swimming beach, museum, and office facilities. Several sites in Pine Ridge are also available for winter camping, although running water is not available at the toilet and shower buildings during the winter.

Itasca's two campgrounds serve approximately 70,000 campers per year. This is the largest number of campers in any Minnesota State Park. Most of these visitors come during the summer months. The park's campgrounds averaged a 65% overall occupancy rate for the May 1 - August 31 time period during the five years from 1993 - 1997. The weekend occupancy rate for the two

campgrounds for the same time of year and period of years was 85% and the weekday occupancy rate was 58%. These rates make Itasca's campgrounds among the most heavily used state park campgrounds in Minnesota. Only three other Minnesota state parks had higher overall occupancy rates during the same five year period (Gooseberry Falls, Tettegouche, and Split Rock Lighthouse). Most of Minnesota's state park campgrounds had substantially lower overall occupancy rates during this period.

Survey research indicates that slightly more than one-third of Itasca's campers stay for only one night, approximately one-third stay for two nights, approximately one-fourth stay for three nights and less than ten percent stay for more than three nights (Nickerson, et al., 1997).

Itasca also operates two group camp facilities that provide overnight accommodations to larger groups of visitors during the spring, summer and fall months (Figure 15). The Lake Ozawindib Group Camp is a former WPA Transient Camp located on the shores of Lake Ozawindib. Two of the existing buildings were constructed in the rustic style characteristic of the WPA/ CCC era park buildings and are listed as contributing elements on the National Register of Historic Places. Foundations of several former buildings constructed in this style are also present on the site. The group camp provides dining facilities, a shower and toilet building, and an open space for tent camping.

The Elk Lake Group Camp is also a former WPA Transient Camp located on the shores of Elk Lake (Figure 15). This is a smaller and less developed site than the Lake Ozawindib Group Camp. The existing building is also constructed in the rustic style characteristic of the WPA/ CCC era park buildings and listed as a contributing element on the National Register of Historic Places. Minimal facilities (shelter building and vault toilets) exist at this group camp.

Headwaters Hostel

The Headwaters Hostel is operated under a cooperative agreement by Hosteling International, a private not-for-profit organization that provides low cost lodging facilities for travelers around the world. A special appropriation from funds managed by the Legislative Commission on Minnesota's Resources (LCMR) provided building rehabilitation costs associated with converting the former park headquarters building into a hostel in the late 1980s. The existing facility reuses an historic structure and provides an additional lodging choice to park visitors. Hosteling International staffs the facility with a resident manager and provides operating funds from the revenues generated. State park staff aid in infrastructure maintenance. Although the hostel is open year round, it is a particularly popular lodging alternative on weekends and during the winter months when the park's resort operation and many of the local resorts are closed for the season.

Concessionaires

Some of the recreational opportunities available to Itasca's visitors are provided by private companies under concession agreements with the MNDNR. An agreement exists to provide summer boat tours on Lake Itasca. A similar agreement exists to provide boat, canoe and bicycle rentals during the summer months. Under both agreements, the concessionaires are responsible for purchase, maintenance, staffing and operations of their equipment. Itasca State Park provides the infrastructure facilities to enable the concessionaires to operate. Concessionaires pay a fee based on their receipts to the park for the opportunity to operate the concessions. These agreements have allowed state park staff to expand the level and number of opportunities available to visitors without the ongoing equipment and staffing costs associated with providing the services.

Recommendations and Actions

Itasca's recreation resource management efforts should focus on providing opportunities for attainment of the recreation resource management goals and target benefits identified earlier in this chapter and realization of the vision and mission statements in Chapter 1. Recreation management actions should adhere to the management zoning concepts presented in Chapter 3 and applicable state and federal laws and be consistent with the park's overall target benefits identified in Chapter 3 and the natural and cultural resource management goals identified in Chapters 4 & 5. Because the quality of the experiences and benefits associated with the park are directly related to the quality of the natural and cultural resources found within the park, it is necessary that recreation management actions taken within the park protect the park's natural and cultural resources. In addition, design of specific facilities to implement these recommendations should adhere to the facility and building management recommendations presented in Chapter 9. Within this context, recreation management activities undertaken to implement the following recommendations should be tailored to the management zone where they will occur according to the management guidelines for each zone presented in Chapter 3.

Although the park's recreation management program generally reflects the program goals outlined earlier in this chapter and the management zone delineations found in Chapter 3, some improvements are recommended. Some of the program improvements may require increased operations and maintenance funding or development funding. A number of these recommendations involve facility modifications which should be conducted in accordance with the guidelines outlined in the facility management chapter (Chapter 9) of this plan. Continued cooperation with the park's resource management and interpretive programs will be essential to a ongoing and successful recreation management program.

The recommendations and management actions that follow are intended to provide a general direction for recreation management activities in the park. Annual work planning meetings will use these recommendations to determine short-term goals, priorities, and actions. Many of the management actions listed below are, therefore broad, and will become more specific through the work planning process.

<u>Recommendation</u>: Continue to provide visitors with a range of quality day use experience and benefit opportunities

<u>Discussion</u>: Visitors come to Itasca to engage in a wide range of activities and seek a range of experiences and benefits. Among the experiences and benefits they seek are (a) solitude, (b) escape from the usual demands of life, (c) enjoyment of nature, (d) relaxation, (e) improved relations with their families, (f) learning about nature, and (g) participation in different activities than what they do at home. In order to accommodate these needs, Itasca should continue to provide a mix of recreational opportunities appropriate for each of the three management zones of the park.

Actions to Implement Recommendation:

A. Examine current traffic flow patterns and parking needs and make appropriate adjustments. Consider elimination of the parking lots at the Wegmann Store Site, along the west side of Main Park Drive at Preacher's Grove, and at the Pioneer Cemetery site. Reduction of available parking near the Headwaters of the Mississippi River, the picnic grounds, and the Indian burial mounds should also be considered;

B. Increase the number of picnic shelters available in the picnic grounds to accommodate groups of various sizes;

C. Identify suitable locations for installation of play areas for children that are consistent with the surrounding landscape. Among the areas to consider are the Douglas Lodge, picnic grounds, and campgrounds;

D. Construct a visitor center for visitor orientation and interpretive programming. See the Interpretive and Environmental Education Services chapter (Chapter 7) for a more detailed discussion of the visitor center needs;

E. Ensure that adequate restroom and drinking water facilities are available in the park. Among the sites to consider additional restroom and drinking water facilities are the picnic grounds and near boat landings;

F. Examine current pedestrian flows in the Concentrated Use Zone and make improvements as necessary;

G. Continue to provide winter recreation opportunities. Consider expanding the winter opportunities available as appropriate;

H. Continue to provide areas for quiet relaxation, solitude, and escape from crowds; and

I. Develop an emergency services plan for the park that addresses public safety issues.

<u>Recommendation</u>: Adopt a set of trail management guidelines aimed at providing a variety of trail opportunities that also allow for natural and cultural resource protection within the park.

<u>Discussion</u>: The park should continue to provide a range of recreational trail opportunities. This range should include opportunities for natural surfaces and paved surfaces, flat terrain and rugged terrain, short hikes and long hikes, pedestrians and bicyclists, snowmobilers and cross - country skiers, and visitors with disabilities. The ability to provide opportunities for attainment of the target benefits associated with recreational trails requires protection of the significant natural and cultural resources found within the park. Protection of the park's natural and cultural resources is more important than trail access, use, or development options throughout the park. Trail management actions should be consistent with both the park's natural and cultural resource management goals.

In addition to these general guidelines, the following trail guidelines should be adopted for each of the three proposed management zones.

Scientific and Natural Area (Zone 1): In this zone, it is necessary to provide only those opportunities that are consistent with state laws and rules governing management of Scientific and Natural Areas. Paved, mechanized, or horse trail opportunities should not be offered within this zone. The design, location, and general purpose of any new trails that might be developed in this zone should be planned and developed in cooperation with the State of Minnesota's Scientific and Natural Area's management staff. Trails in this zone should be limited to narrow hiking trails with natural surfaces and be maintained primarily to provide opportunities for education and achieving solitude.

Backcountry Zone (Zone 2): Trails in this zone should provide visitors with the opportunity to engage in a range of activities that are consistent with the park's target benefits and sound resource management principles. Trails in this zone should also have natural surfaces, be the minimum width necessary to accommodate the trail's primary use, and offer opportunities for wildlife viewing, scenic vistas, solitude, and quiet contemplation in a natural environment. Visitor safety and the quality of visitor experiences and benefits should be major considerations in trail design in this zone. Existing trail alignments should be used whenever possible when new trail opportunities are considered for this zone. It is important that Interpretive trail opportunities such as short loops, signs, guideposts, trail guides, and guided programs be present in this zone. The size of this zone also makes it important that some trails be maintained primarily for access to camping opportunities, resource protection, and management activities that occur within the park.

Concentrated Use Zone (Zone 3): Trails in this zone should offer a mix of trail surfaces (natural to paved) and provide opportunities for visitors to engage in activities and serve a diversity of age groups, group sizes, and skill levels. Trails in

this zone should also provide access to park facilities and features within the zone. As such, trails in this zone should be integrated into the park's overall transportation system, and should offer connections to designated transportation routes outside the park, where appropriate. Visitor safety, conflict management, visitor dispersal, and movement of people should be major considerations in trail design for this zone. Trail connections to interpretive and educational opportunities such as short tail links, signs, large group facilities, historical structures, and naturalist-led programs should continue to be provided and improved upon where possible in this zone.

Although trails in this zone will generally be more intensively developed than the trails in Zones 1 and 2, protection of the significant natural and cultural resources found within this zone should be more important than trail access, use, or development options.

Actions to Implement Recommendation:

A. Periodically review trail management activities for consistency with the park's trail management guidelines and adjust management activities as appropriate;

B. Evaluate current trail opportunities for consistency with the suggested trail management guidelines and make appropriate modifications to current trail alignments, locations, and designs;

C. Evaluate future requests for specific trail opportunities based on the target benefits, sound resource management principles, and the recommended trail management guidelines. Trail alignment decisions should also consider soil characteristics;

D. Explore alternative trail designs that will aid in reducing visitor conflicts, resource impacts and reliance on automobiles. Alternative designs should consider use of mass transit, one-way corridors, looped trails, and varied trail widths as appropriate;

E. Periodically monitor trail use patterns, impacts of trail uses on nearby natural and cultural resources, and quality of visitor experiences; and

F. Work with interpretive and natural/ cultural resource management staff to design appropriate trail opportunities.

<u>Recommendation</u>: Continue to provide visitors with a range of trail opportunities.

<u>Discussion</u>: Visitors come to Itasca seeking a range of trail opportunities from short hiking and interpretive trails, remote hiking trails, and paved bicycle trails during the non-winter months and cross-country ski and snowshoe trails to snowmobile trails during the winter months. Visitors who engage in different trail activities also seek somewhat different experiences and settings.

Actions to Implement Recommendation:

A. Continue to provide natural surfaced hiking trails throughout the park that vary in length, width, and level of difficulty. Maintain trail access to the park's backpack camping sites;

B. Continue to provide bicycling opportunities in the Concentrated Use and Backcountry zones. The existing paved bicycle trail in the Concentrated Use Zone should be maintained or modified as appropriate. Although bicycling opportunities should continue to exist in the Backcountry Zone, bicycling opportunities should be limited to the existing paved roads and future connections to bicycling opportunities outside the park. Any future connections to trails outside the park should be by routes with the least impact on this zone's resources and visitor experiences. The only connections being considered at this time would be a connection to bicycle routes along US Highway 71 and a connection to a future trail being proposed by Clearwater Country connecting Bagley to the northwest corner of Itasca State Park. Any other proposed long-term bicycle routes in this zone would constitute a major change in the management zoning concepts and should be considered according to the processes described in Chapter 12 (Plan Amendment Process);

C. Develop a backpack camping loop in the Backcountry Zone to provide campers seeking to camp in multiple sites during a single visit an opportunity to move between sites. Existing trail corridors should be modified to provide additional backpack camping sites wherever possible to provide this opportunity;

D. Continue to provide interpretive trail opportunities as recommended in the Interpretive and Environmental Education Services chapter (Chapter 7);

E. Continue to provide winter trail opportunities that include cross-country skiing, snowshoeing, and snowmobiling trails. Separate trail corridors should continue to exist for each of these opportunities and groomed cross-country skiing and snowmobile trails should remain part of the park's trail system. The existing snowmobile trail system should be maintained. However, any major expansion to existing snowmobile corridors that might be proposed should be considered through a public review process consistent with the Plan Amendment chapter (Chapter 12). Providing an additional link from the existing snowmobile trail to a new visitor center as recommended in Chapter 7 (Interpretive and Environmental Education Services) shall not be considered a major revision;

F. Develop a trail center to serve a variety of summer and winter visitors including hikers, bikers, walkers, cross-country skiers, snowmobilers, and snowshoers. The center should be a year-round facility that is conveniently located such that it is accessible from the park's trail system and allows for eventual closing of Forest Inn

as a trail center during the winter months. Consider co-location of the trail center in the visitor center recommended in Chapter 7 (Interpretive and Environmental Education Services);

G. Continue current restrictions regarding horseback riding, mountain biking, and recreational ATV riding on the park's trail system;

H. Establish regular trail maintenance schedules and consider periodically closing trail segments for maintenance and resource protection or restoration;

I. Ensure that adequate parking facilities and signage are provided at trail access points and that they are consistent with the relevant management zone guidelines and the recommended trail management guidelines. Directional signs should also be provided at key trail intersections; and

J. Provide visitors with appropriate maps and informational brochures that identify where specific trail opportunities exist in the park.

Recommendation: Continue to maintain a range of water recreation opportunities.

Discussion: Many visitors come to Itasca State Park to engage in water recreation activities ranging from swimming and boating to fishing and sight-seeing. It is important that the park offer opportunities for those water recreation activities that are consistent with sound resource management principles, the park's management zoning concepts, and the park's target benefits.

Actions to Implement Recommendation:

A. Continue to provide a swimming beach in the Concentrated Use Zone complete with sanitation facilities. Erosion control measures should be taken at the existing swimming beach;

Although visitors do swim in the Backcountry Zone lakes, any developed swimming facilities in this zone should be limited to the group camps. Swimming opportunities should not be provided in the Scientific and Natural Area (Zone 1);

B. Provide developed boat accesses, fishing opportunities, and boating opportunities as recommended in the Natural Resource Management chapter (Chapter 4);

C. Consider the aesthetic impacts to boaters, sightseers, and hikers when projects are undertaken that modify the park's shorelines;

D. Continue to provide opportunities for winter activities that occur on the park's lakes; and

E. Periodically monitor trail use patterns, impacts of trail uses on nearby natural and cultural resources, and quality of visitor experiences.

<u>Recommendation</u>: Continue to provide visitors with a variety of camping opportunities.

<u>Discussion</u>: Itasca State Park's variety of camping opportunities are important to visitors and attract a range of visitors from those seeking showers, flush toilets, and electricity to those seeking remote backpack sites. Included in the mix, are people arriving in larger groups. The park's high campground occupancy rate underscores the importance of camping opportunities to Itasca's visitors. At the same time, the impact of camping facilities on the park's natural and cultural resources is an important consideration when determining the appropriate size and location of camping opportunities.

Actions to Implement Recommendation:

A. Continue to maintain Bear Paw and Pine Ridge Campgrounds at relatively the same sizes that exist today. Rehabilitation of sanitation facilities should occur in the campgrounds. Construction of additional sanitation facilities should also occur in Pine Ridge Campground to serve the additional camping loops that have been constructed in this campground since the existing sanitation facilities were built. More detailed discussion of facility modifications related to these campgrounds is found in Chapter 9 (Buildings and Facility Management);

B. Continue to monitor vegetation within the campgrounds and take appropriate actions, such as tree planting and site rotation to ensure that impacts of visitor use on vegetation is minimized;

C. Consider expanding the number of backpack camping sites available to visitors in the Backcountry Zone. Disperse additional backpack sites within this zone to accommodate visitors who desire opportunities to camp for several days in multiple locations within the zone; and

D. Continue to provide group camp opportunities at the Ozawindib and Elk Lake Group Camps. Facilities at these camps should be restored, rehabilitated and upgraded as appropriate to protect the camps' historical resources. Maintain the Ozawindib Group Camp as a semi-modern group camp and the Elk Lake Group Camp as a primitive group camp. In addition, a picnic shelter, larger toilet facilities, and more clearly marked camping facilities should be constructed at the Ozawindib Group Camp and a picnic shelter should be constructed at the Elk Lake Group Camp.

<u>Recommendation</u>: Continue to explore ways to involve a variety of people and agencies in recreation management actions within Itasca State Park.

<u>Discussion</u>: Development of this management plan has been the result of an intensive public involvement effort that included more than 200 people. Many of these people participated in the long and arduous task of developing the recommendations found in this chapter. The energy and commitment that these people brought to the process is an incredible resource that is available to the park's management team for use in other recreation management actions.

Actions to Implement this Recommendation:

A. Continue to develop lists of recreation management projects that volunteers can accomplish;

B. Provide increased staff assistance to organize, supervise, and guide volunteers;

C. Continue to hold regular meetings of the Itasca State Park citizen organizations to discuss recreation management issues, develop strategies for addressing them, and enlist volunteers to aid in accomplishing the necessary tasks;

D. Continue to publicize volunteer successes and opportunities for public participation; and

E. Continue to work with neighboring public and private land owners to aid in ensuring that the park continues to provide appropriate recreational opportunities.

Research and Monitoring

Periodic research and monitoring of the park's recreation management efforts is important to measuring the quality of visitor experiences, impacts on natural resources, and general effectiveness of management efforts to respect the management zoning concepts and realize the park's target benefits. Although some research exists on visitor behavior, no systematic approach to conducting social science research in the park has been adopted. Attendance data and trail counts have been collected on an annual basis. This research should continue to provide basic information on specific facilities that visitors use. Baseline research on the benefits that visitors and communities attain from the park has been conducted. Follow-up experience and benefits research should be conducted on a regular basis to evaluate progress toward meeting visitor expectations and to identify changes in expectations. This line of research examines the psychological experiences and benefits that visitors find important to and attain from their visits. This line of research also assesses the relationships that

exist between the park and local communities by examining the value that the park's resources have to communities. Social science research should be coordinated with natural science research conducted in the park to examine relationships between social and natural phenomena.

Clear, specific, quantifiable, and measurable recreation resource management objectives should be developed to aid in monitoring and evaluating the quality of visitor experiences and benefits and the effectiveness of particular management actions taken in the park. Standards and indicators for quality experiences should be developed to provide specific measures for monitoring and evaluation. Similar objectives, standards, and indicators should be established for measuring the recreation management program's effectiveness at realizing its target benefits. Appropriate modifications in management techniques and direction should be made based on research results.

Chapter 7. Interpretive and Environmental Education Services

Introduction

As the largest state park in northwestern Minnesota and one of the most heavily visited state parks in Minnesota, Itasca State Park plays a significant role in interpreting the natural, geological, and cultural resources of the Pine Moraines and Outwash Plains Subsection. The park's range of nationally significant natural and cultural features and large number of visitors provide ample opportunity for interpretation and environmental education. Multiple sites and programs exist throughout the park to interpret the park's range of natural, cultural, and historical features.

In 1997, over 500,000 day and overnight visitors came to Itasca State Park. With 100,000 overnight visitors, the park received more overnight use than any other state park in Minnesota. These visitors came from the Itasca region, other regions of Minnesota, other states, and foreign countries. Most of these visitors participated in the park's interpretive programs, visited the park's many non-personal interpretive sites, or sought visitor orientation information. Participants in the formal (personal) interpretive programs included tour groups, school groups, special interest groups, families, and individual park visitors. In addition, visitors enjoyed a rich array of informal (non-personal) interpretive opportunities such as self-guided trails, information kiosks, brochures, and maps.

This chapter serves as Itasca State Park's interpretive plan and basically follows the format developed by the Division of Parks and Recreation between 1992 - 1995. Individual park interpretive plans are intended to be working documents that clearly describe the level of interpretation at the park, and reflect the goals, objectives, and recommendations found in the Division of Parks and Recreation's statewide Interpretive Plan (MNDNR, 1995).

This chapter identifies (a) the statewide interpretive services goals, (b) the target benefits guiding the park's interpretive and environmental education effort, (c) the park's interpretive and environmental education clientele, and (d) the park's primary interpretive and environmental education themes. In addition, this chapter presents an inventory of the interpretive services currently offered at Itasca State Park and recommendations for improvements to existing interpretive services.

Throughout this chapter, the terms "interpretive and environmental education services" and "interpretive services" are used interchangeably to mean the entire collection of personal and non-personal interpretation and visitor information services provided to park visitors.

Statewide Interpretive Services Goals

The Division of Parks and Recreation's statewide interpretive plan views interpretation as a park-specific effort responsible for conveying the meaning of our natural and cultural heritage to state park visitors and examining the relationships that exist between each park's natural and cultural

heritage. The statewide interpretive plan identifies the primary statewide goals for meeting these responsibilities. Among these are:

- To promote understanding, appreciation, and enjoyment of natural and cultural resources in Minnesota;
- To assist in protecting each state park's resources; and
- To increase public awareness of critical environmental problems on a local, state, national, and worldwide scope (MNDNR, 1995).

Target Benefits

The list of possible benefits associated with the park's interpretive and environmental education efforts is lengthy. The following target benefits (desired outcomes) have been chosen to guide the park's interpretive and environmental education programming.

Visitor benefits: The park's interpretive and environmental education programs should provide opportunities for visitors to (a) learn about nature, (b) learn more about the natural and cultural history of the area, (c) enjoy the natural scenery, (d) experience new and different things, (e) enjoy the smells and sounds of nature, (f) increase their environmental stewardship, (g) reflect and clarify their personal and spiritual values, and (h) enjoy activities different from those they participate in at home.

Environmental benefits: The park's interpretive and environmental education programs should benefit the environment through many opportunities designed to enhance the visitor's sense of (a) environmental stewardship and protection, (b) human dependency on the environment, (c) their personal environmental ethics, and (d) the importance of environmental issues.

Community benefits: The park's interpretive and environmental education programs should provide opportunities for local communities to gain an (a) increased sensitivity to environmental needs, (b) enhanced identity for the area, (c) appreciation for the area's natural and unique ecosystems that are protected within the park, and (d) increased sense of community pride.

Economic benefits: The community outreach and visitor information components of the park's interpretive efforts should aid the local and regional tourism economy and assist in regional economic growth generated by tourism.

Clientele

Itasca State Park's interpretive and environmental education programming takes place throughout the park and serves individuals to large groups. These include school groups, special interest groups, residents of all parts of Minnesota, visitors from other states, and international travelers. The amount of time visitors spend in the park varies from a few hours to several days. Many visitors come to the park only for a walk across the Headwaters of the Mississippi River, while others enjoy an evening program, a hike along one of the park's self-guided trails or a visit to one or more of the park's many exhibits, displays and kiosks. Still others may spend several days in the park camping or staying in Douglas Lodge or a rental cabin. In addition, visitors come with differing levels of interest from the person who wishes a general overview of a range of topics to the person who wishes to explore minute details of particular natural or cultural phenomena. Interpretive programs must be designed to accommodate this range of visitors while fulfilling the target benefits. Both personal and non-personal services are offered to these visitors.

Individuals

Interpretive and environmental education services should be designed to reach a range of participants. This range includes those whose primary purpose for visiting the park is to participate in a program and those whose involvement in interpretive programs is coincidental to their visit. Many of the people who participate in interpretive and environmental education programs who are not associated with an organized group are hikers, bikers, sightseers, picnickers, boaters, anglers, campers, researchers, and those individuals and families engaged in other educational and recreational activities.

Groups

The park's interpretive programs should also serve a variety of organized groups ranging in size from a few people to several hundred. These groups participate in programs developed and carried out by park naturalists, volunteers, and group leaders. Most of these groups also sample the park's multiple non-personal interpretive opportunities. Many of the groups who come to the park for interpretation and environmental education fall into one of the following categories:

- School and other youth groups/ clubs;
- Overnight visitors to one of the park's two group camps or rental cabins;
- Organized bus tours;
- Senior citizen groups/ clubs;
- The University of Minnesota and other higher education institutions;
- Special interest groups;
- Environmental/ conservation groups;
- Public and private environmental education providers; and
- Civic organizations.

Interpretive Themes

Four Primary themes have been identified for Itasca's interpretive and education programs. Each primary theme is accompanied by several supporting themes. Together the primary and supporting themes represent the how, why, when, and where of Itasca State Park's past, present, and future, and serve as the foundation for the park's interpretive and education programs. Some of the supporting themes logically fall under more than one primary theme, but are listed under only one, to avoid unnecessary repetition.

Primary Theme: Itasca's old-growth forest ecosystem is unique and should be protected.

Supporting Themes:

- Glaciers shaped the landscape of Itasca as we know it today.
- Itasca State Park exists today due to the vision and persistence of Jacob V. Brower and his support in the state legislature.
- Itasca's old-growth pine ecosystem is the major reason Itasca was established as a state park.
- In 1903, Marie (Mary) Gibbs, the first woman to act as a park commissioner in North America, put her life at risk to open a logging dam at the Headwaters of the Mississippi and save several hundred acres Itasca's pines from flooding.
- The park's pine ecosystem represents the largest contiguous block of old-growth pine on state-owned land in Minnesota today.
- The park's pine ecosystem provides a diversity of habitats for many special aquatic and terrestrial plants and animals.
- The major natural forces that effect the park's ecosystems are fire; disease; insects; animal population dynamics; and weather events such as windstorm damage and periods of drought.

Primary Theme: The Headwaters of the Mississippi River is a significant place ecologically and historically that continues to provide a unique sense of place to park visitors.

Supporting Themes:

- Glacial activity and the resulting glacial moraines to the south and west of the park created the Headwaters Watershed.

- The search for the Mississippi River's elusive source attracted explorers, adventurers, and cartographers to the region.
- The Mississippi's source provides an opportunity for visitors to learn about the river's place in history, and its place in the natural and socio-economic scheme for the region and world today.
- The Mississippi River's journey to the Gulf of Mexico demonstrates the principle that from tiny streams mighty rivers grow.

Primary Theme: *Diverse peoples have inhabited and used this landscape over time with varying effects.*

Supporting Themes:

- Itasca's cultural heritage spans approximately 8,000 years and provides visitors with an opportunity to learn about Minnesota's human inhabitants and how they lived.
- Pioneer settlement and logging are an important part of the Itasca area's history because of their impact on the environment and the region's economy.
- Itasca contains over 80 facilities and structures listed on the National Register of Historic Places. These include some of the park's first buildings and those constructed by, the Works Progress Administration, the Civilian Conservation Corps, and the Veterans Conservation Corps.
- History of visitor use in the park within the context of changing landscape has played an important role in the park's development.

Primary Theme: *Instilling a sense of stewardship and connectivity between the natural environment, the area's cultural past and the visitors' daily lives is an important responsibility of the Itasca State Park interpretive program.*

Supporting Themes:

- Social science and historical research continues to assist in our understanding of the Itasca area's rich cultural heritage.
- Making park visitors aware of research results increases their understanding of the park and specific management actions that might be taken in the park.
- For whatever reason visitors come to Itasca State Park, they should come away with a better understanding of the park, it's region, and the connection between themselves and the natural and cultural resources within the park.

- The park's old-growth pine ecosystem presents a unique opportunity to obtain the educational, spiritual, recreational, and aesthetic benefits derived from such.
- Managing Itasca's forests and waters for the benefits that accrue from them requires balancing the use of resource with leaving them to natural processes.
- Adaptive reuse of historically significant buildings allows managers to retain a connection to the past while meeting changing operational needs.

Summary of Existing Services

The first organized interpretive programs were offered in the Minnesota State Park System at the park by the WPA (Works Progress Administration). WPA staff began a guide service in 1941. This service was short lived, however, ending when the United States became involved in World War II. Seasonal programs have been offered at the park since 1947. Year-round programming did not begin until 1986. From 1947 until the late 1950s, staff from the University of Minnesota's Bell Museum of Natural History offered summer interpretive programs at the park and several other state parks under a cooperative arrangement. From the 1950s until 1986, the park hired seasonal naturalists to conduct interpretive programming. In the 1980s, the park also began an increased emphasis on its non-personal interpretive services that continues today.

Environmental Education

Itasca State Park is easily accessible to several neighboring school districts wishing to conduct environmental education activities. School districts from around the state have used the park for environmental education programming, but the largest number of school groups come from districts within 100 miles of the park. In addition to K-12 public schools, other organizations such as colleges, private schools, special education programs, social service programs, scouting organizations, 4-H, private clubs, church groups, and public and private day camps make use of the facilities and services in the park for environmental education.

The park has unique features which make it a desirable place for environmental education. The Headwaters of the Mississippi River, old-growth forests, lakes, streams, trails, prehistoric and historic cultural resources, large natural areas, high biodiversity, diverse vegetation, and an abundance of wildlife offer diverse study opportunities. The Headwaters of the Mississippi River is an especially significant environmental education site, permitting students to (a) personally experience the source of one of the world's most significant rivers, (b) learn about impacts that humans have had on the river, and (c) learn about the importance that the river has had on human habitation and resource use. Similarly, a walk in the woods offers students a unique opportunity to observe the effects of allowing natural processes to function with minimal disturbance. Most other land areas in Minnesota demonstrate the effects of management activities that have manipulated and controlled the natural processes.

At the same time, the park has examples of the pressures on natural areas and systems caused by human habitation of landscapes. Runoff and erosion along park roads and trails, noise pollution along main park drive, compaction of campsites in Bear Paw and Pine Ridge campgrounds, loss of vegetation and habitats from overuse of some trails are all talked about as part of the environmental education program.

Students can also study significant segments of Minnesota's history and the relationship between people and the environment through time at the park. Important components of the environmental education program conducted at the park include; (a) early Indian cultures, (b) discovery of the source of the Mississippi, (c) early pioneer settlement in northwestern Minnesota, (d) conflicts over protection of pine forests from logging, and (e) Mary Gibbs' role as the first woman to act as a park commissioner in the state.

The park's naturalists assist many groups with environmental education programming to explore these issues. Staff also provides service-learning opportunities and projects for youth and adult organizations who would like to put into action their goals of learning about ecosystems and the effects that humans have on those ecosystems. This range of environmental education programs requires a continued integration of the resource management and interpretive services programs found within the park.

Personal Services

Currently (1998) the park offers a schedule of 15-21 programs each week throughout the summer. These programs provide a range of learning opportunities including (a) hikes, (b) campfire programs, (c) afternoon environmental education activities, (d) evening film and slide programs, (e) auto tours, (f) canoe caravans, and (g) history tours. Many of these programs are conducted on the park's extensive lakes and hiking trails. Weekend programs are also regularly scheduled in spring and fall, and several special weekend programs are offered during the winter months. These programs include hikes, films, and slide programs during the fall and spring, and cross-country skiing, snowshoeing, and snowshoe making during the winter.

In addition to the regularly scheduled programs, the interpretive staff also conducts requested programs for a wide variety of groups and organizations. For example, school group programs that generally involve 2-4 hours of programming each are booked solid in the spring and fall. Staff receive significantly more requests for school groups than they have the resources to accommodate.

Many commercial bus tour operators also arrange for an on-board park naturalist to provide programming while their groups are visiting the park. In addition to the on-board naturalist, commercial tour visits often include food service at Douglas Lodge.

Non-Personal Services

Over the last 10 years, the number of non-personal interpretive opportunities available at the park has increased. Now more than 25 interpretive signs or wayside exhibits are located throughout the park. These address most of Itasca's primary and secondary themes. There are currently several self-guided trail opportunities available.

The park's gift shops sell a variety of informational materials specifically about Itasca State Park. These include (a) a cassette tape tour of Itasca; (b) a detailed bird checklist; (c) a Wilderness Drive Auto Tour Guide booklet; (d) a booklet and poster on the history of the Old Timer's Cabin; (e) two videos relating the search for the source of the Mississippi and the park's founding; and (f) the Itasca Guidebook - a book published annually incorporating resource publications, maps, and informational and historical guide sheets. Many of the materials available to the public are in need of updating.

Primary Non-Personal Interpretive Sites

The large number of non-personal interpretive opportunities that exist at Itasca State Park makes it difficult to present a complete list in this document. The following list of primary non-personal opportunities represents those sites where interpretive signs, kiosks, displays, or exhibits exist and are most commonly visited by park users. This inventory provides a sense of the complexity, diversity, and range of non-personal interpretive opportunities available in the park.

Mississippi River Headwaters
Wilderness Drive
Landmark Interpretive Trail
Blow Down Trail
Bohall Wilderness Trail
Forestry Demonstration Area
Large White Pine
Minnesota's Largest Red Pine
Itasca Bison Kill Site
Aiton Heights Fire Tower
Mary Lake - the Mary Turnbull Story
Mary Lake Deer Exclosure
Douglas Lodge
Douglas Lodge Complex and other CCC era Buildings
Dr. Roberts Trail
Old Timer's Cabin
Preachers Grove
Peace Pipe Vista
Itasca Pioneer Cemetery
Wegmann Store Ruins and Replica
Itasca Indian Cemetery

Staff

The park currently has one year-round Interpretive Naturalist, two seasonal Interpretive Naturalists (3-6 months), and 3-4 summer interpretive interns.

Many local citizens work as trained volunteers to supplement the park's interpretive staff. These volunteers provide a variety of services. These include hosting at the Old Timer's Cabin, collating and binding Itasca Guidebooks each summer, guest speaking, and answering questions at the Forest Inn visitor information desk.

Facilities

Itasca State Park has never had a full service visitor center, as might be expected in a park of its size, visitation rates, and stature. Throughout the past 50 years, various other buildings, built for other purposes, have been used for displays, exhibits, programming, or public information. As of 1998, three smaller areas in the park attempt to fill these needs:

- The Headwaters History Center is non-staffed and tells the story of the search for the source of the Mississippi River through exhibits and a video;

- The non-staffed Museum building houses exhibits on the Itasca Story - from the retreat of the glaciers, through forest history, settlement history, and animals and plants of Itasca, to future resource management challenges. The museum supports all of the park's interpretive themes. An upgrade of these exhibits was completed in 1998; and

- The lobby of Forest Inn serves as a minor visitor center with a large relief model map and brochure racks. Forest Inn is a major programming site with many afternoon and evening programs and portable displays. The south wing seats 120 people and is often crowded during weekend summer evening programs. At times, more than 150 have been squeezed into the room and back hallway.

Campfire programs are held at the amphitheater located next to the Museum building. This facility would better be described as a council ring, containing a stone elevated fire ring and plank benches that seats about 75 people. The benches are not adequate to meet current programming needs.

Recommendations and Actions

Interpretive opportunities offered within the park should (a) provide opportunities for attainment of the target benefits; (b) adhere to the management zone guidelines detailed in Chapter 3; (c) reflect the natural, cultural, and historical character of their surroundings; and (d) focus on the themes identified above. Within this context, interpretive facilities and programs developed to implement the recommendations in this plan should be tailored to the management zone where they will be provided according to the following general guidelines for each zone.

Zone 1 (SNA): Facilities and interpretation in this zone should focus on ensuring opportunities for visitors to experience introspection and solitude in this zone. As such, the facilities should be minimal, low impact, rustic, and consistent with SNA rules and regulations. Interpretation should be primarily low impact and non-personal.

Among the interpretive facilities and tools identified for this zone are walking trails, signage, guidebooks, printed materials, and audio tours.

Zone 2 (Backcountry): Facilities and interpretation in this zone should be rustic but more prevalent and potentially more extensive than those found in Zone 1 and considerably less extensive than those found in Zone 3. Although both personal and non-personal interpretation occur in this zone, the emphasis should continue to be on providing non-personal opportunities.

Among the interpretive facilities and tools identified for this zone are the types found in Zone 1 plus trails, information kiosks, historical structures, and semipermanent exhibits.

Zone 3 (Concentrated Use): This is the most heavily developed zone in the park and as such should be the focus of the major building needs for the interpretive program. Extensive personal and non-personal interpretive programming has existed in this zone for a long time and is expected to continue.

Among the types of facilities that might be found in this zone are all of those that could be found in Zones 1 & 2 plus an amphitheater, museum sites, video and film kiosks, indoor displays and exhibits, and a visitor center.

Although the existing interpretive effort generally reflects this management zone delineation, some improvements are recommended. Program improvement also requires additional staff, facilities, and equipment. Opportunities also exist for increased cooperation with other DNR divisions and other agencies, such as the Minnesota Historical Society, the White Earth Reservation, and the University of Minnesota that could lead to program enhancement and expansion.

The following recommendations address some of the major areas where current interpretive and environmental education efforts can be improved. Some of these recommendations speak to personal interpretation, some speak to non-personal services and others speak to both types of services. As the recommendations are implemented, it is important to maintain a balance between personal and non-personal services. While it is desirable to increase non-personal interpretation, it should not be accomplished at the expense of personal interpretation.

Recommendation: Construct an Itasca State Park visitor center.

Discussion: The most important recommendation for improvement of the interpretive and environmental education effort is the construction of a year-round visitor center for Itasca State Park. The park currently does not have a visitor center to provide (a) visitor orientation to the park; (b) locations for displays; (c) an auditorium for large group programming; (d) a library; (e) adequate office space; or (f) facilities for storage of interpretive displays, exhibits, equipment, and archives. The center would provide visitors with a comprehensive overview of the Itasca State Park story, encourage them to explore the park, and invite them to participate in the interpretive and environmental education opportunities available in the park and region.

Actions to Implement Recommendation:

A) Complete a visitor center plan that:

- Explores how a new visitor center would most effectively serve and complement the park's diverse and dispersed interpretive and environmental education program;

- Identifies a site for a visitor center that is consistent with the overall interpretive and environmental education program needs, complements the current programming, and is strategically located so that it can be open year-round with minimal staff. Sites to consider include the area near the east contact station, the junction of highways 71 and 200, and the Headwaters of the Mississippi area;

- Examines year-round staffing needs of the visitor center;

- Identifies the space requirements to effectively accomplish visitor orientation to the park and the region;

- Identifies the archival/ storage space needs for the park's extensive collection of photographs, maps, historical documents, studies, memorabilia, exhibits, written materials, brochures, and equipment that are currently scattered throughout the park;

- Identifies library space needs so that books, internet connections, computers and other reference materials are made readily available for staff and visitor use;

- Identifies design and construction costs for the facility; and

B) Design and construct a visitor center according to the visitor center plan.

Recommendation: Increase the number of full-time, seasonal, intern, and volunteer interpretive staff.

Discussion: Additional full-time and seasonal interpretive staff are needed. The Division of Parks and Recreation's Statewide Interpretive Plan identifies the need for an additional year-round full-time park naturalist and continuation of the 2 seasonal naturalist positions currently assigned to the park. However, the park's interpretive and environmental education programs are more similar to national park quality programs and warrant comparable staffing. Staffing patterns for comparable programs of the size and significance of Itasca State Park's suggest that 2 additional full-time and 1 additional seasonal naturalists are needed to meet the park's interpretive and environmental education needs. Some specific needs for additional staff are outlined below.

Existing staff has not been able to meet the growing demand for school group, tour group, and community organization programming. Interpretive hikes led by one naturalist often attract 60 - 200 people (too many for quality interpretation by one person), and evening programs regularly attract similar numbers. Sufficient staff time is also not available to rewrite outdated publications; update kiosks and displays; and adequately archive materials, displays, and historical documents.

Interpretive Interns are and will continue to be key to a successful program. The park currently operates with 3-4 summer interns a year depending upon available funding. However, the park's interpretive budget only supports one of these positions. The remaining intern support is provided through grants or the regional interpretive budget. Permanent funding should be made available to the park to support the internship program. Providing low cost rental housing within the park is also important to intern recruitment and retention.

In addition, park interpretive staff need to be more readily available to deliver programs at locations outside the park (i.e., local schools, community organizations, etc.) to complement the onsite programming. Many of the recommendations included in this section depend upon additional staffing. See the Staffing and Operations Costs chapter (Chapter 11) for additional discussion of the park's overall budgetary needs and priorities.

Although volunteers are currently used to supplement the park's paid interpretive staff, additional volunteers should be recruited and trained to staff information counters, assist in preparation and delivery of programs, aid in conducting tours, and assist with school groups. Current staff size does not allow for successful recruitment, training, and supervision of an expanded volunteer program.

Actions to Implement Recommendation:

A. Hire 2 additional full-time year round and 1 additional seasonal naturalists to prepare and deliver interpretive programs, adequately staff the proposed visitor center, manage volunteer time, and increase community outreach efforts and work on non-personal programming;

B. Strengthen the park's interpretive internship program and provide adequate funding for internships within the park's interpretive and environmental education budget;

C. Recruit and train additional volunteers to assist with interpretive and environmental education services; and

D. Continue to provide low cost rental housing space for interns and volunteers and consider expanding housing available to seasonal staff.

Recommendation: Provide modern facilities that adequately meet interpretive programming needs.

Discussion: Itasca State Park's diverse and dispersed interpretive and environmental education staff use a variety of facilities to provide effective programming. Several additional facilities (buildings, trails, and kiosks) should be provided to complement current facilities or to replace existing inadequate ones.

Actions to Implement Recommendation:

A. Evaluate the effectiveness of demonstration sites currently used to interpret natural processes and resource management activities in the park and modify or expand use of such sites as appropriate;

B. Construct a new and larger outdoor amphitheater with seating for at least 200 people plus overflow on the east arm of Lake Itasca. The current Brower Inn site should be considered for such a facility;

C. Redesign and rebuild the Landmark Trail information kiosk and parking lot to provide two-way access, restroom facilities, and more accessible orientation information for Wilderness Drive;

D. Evaluate the effectiveness of the existing trail system for personal programming and create additional short-looped trails as appropriate to meet the program's needs; and

E. Redesign and/ or relocate interpretive facilities at other locations in the park (i.e., the Headwaters area, the amphitheater, etc.) to conform to recommendations made in this chapter.

Recommendation: Enhance the personal interpretive services available to visitors.

Discussion: Itasca State Park has provided personal interpretive opportunities to visitors for over 50 years. This strong tradition is an important component of park operations and quality visitor experiences. Although the program has periodically expanded, the last major expansion occurred with the creation of a full-time naturalist position in the late 1980s. It is again time to enhance the program to accommodate growing public demands for personal interpretive programming.

Actions to Implement Recommendation:

A. Expand interpretation of the park's primary and supporting themes, particularly the cultural history themes;

B. Explore the feasibility of providing regularly scheduled interpretive bus tours of Wilderness Drive led by a park naturalist. A secondary benefit of such a tour might be reduction in the amount of vehicular traffic on Wilderness Drive;

C. Expand school group activity within the park including expansion of the park's implementation of Minnesota Greenprint (Minnesota's statewide environmental education plan);

D. Develop environmental education packets that focus on the park's primary themes. These should be correlated with school curricula;

E. Develop a teacher's guide to the park and offer teacher training on how to deliver interpretive and environmental education programs. These should focus on helping teachers effectively use park staff, facilities, and resources and use of other facilities and resources within the landscape region;

F. Use a landscape approach to interpretive programming that focuses on landscapes and ecosystems rather than individual species wherever possible;

G. Expand the number of programs that provide interactive learning opportunities;

H. Develop and implement cooperative interpretation and environmental education service agreements with private, county, state, and federal providers to more effectively fulfill all of the park's interpretive and environmental education needs; and

I. Increase the amount of training and outreach provided to other park staff on the nature of the interpretive and environmental education services offered at the park.

Recommendation: Continue to enhance the non-personal interpretive services offered at the park.

Discussion: Non-personal interpretation is an important component of interpretive and environmental education services at Itasca State Park. Non-personal interpretation opportunities exist throughout the park to complement the personal interpretive and environmental education programming offered. These opportunities reach visitors on their time, at their pace, and in the amount that they desire. In recent years, an effort has been made to expand non-personal services available to visitors. This effort should continue.

Actions to Implement Recommendation:

A. Increase and diversify the type and amount of non-personal interpretation offered (the focus should be on quality of material delivered not the quantity);

B. Increase efforts to interpret the park's rich cultural history;

C. Evaluate and improve the quality of current non-personal interpretive services (i.e., text, exhibits, and facilities);

D. Evaluate the text found in the annual guidebook with a special emphasis on ensuring its utility for children, people with special needs, and other target audiences;

E. Offer more educational materials for sale in the park's gift shops that focus on northern Minnesota's ecosystems;

F. Offer more printed materials that are adaptable from year to year and location to location within the park;

G. Produce additional literature that interprets the park's natural and cultural features, such as a geology guide;

H. Acquire audiovisual materials (films, etc.) that are more specific to the park and the Pine Moraines and Outwash Plains Landscape;

I. Evaluate the park's existing exhibits and consider constructing new exhibits as appropriate. There may be a need to emphasize some themes over others as exhibits are revisited; and

J. Construct additional information kiosks and trail signs.

***Recommendation**: Continue to enhance community outreach.*

Discussion: An important function of Itasca State Park's interpretive and environmental education program is sharing information about the park with local citizens, businesses, media, and visitors. The park is also one of many locations in the landscape region where visitors can find interpretive and environmental education opportunities. It is important that efforts to work with local communities and other providers continue to expand as the diversity of opportunities in the region increases and information technology improves.

Actions to Implement Recommendation:

A. Continue to build better and stronger partnerships with local colleges and universities, environmental education centers, and other agencies;

B. Expand interpretation of American Indian culture through involvement of American Indians in program design and implementation;

C. Continue to improve the park's efforts to tell the whole DNR story and to increase visitor understanding of ecosystem-based management (EBM);

D. Continue to develop media releases that talk about "what's up at Itasca;"

E. Continue to improve the system used to disseminate information about the park and its interpretive programs to media and local businesses;

F. Increase efforts to interpret why and how specific management activities are chosen for the park (e.g., deer herd management and historic building restorations);

G. Continue to target individual audiences to effectively accommodate their program and information needs; and

H. Expand social and natural science research efforts to increase understanding of the park and the people who interact with it.

Research and Monitoring

Evaluation of the interpretive and environmental education recommendations and actions outlined in this chapter will be performed on an ongoing basis by the park management team, regional naturalist, and the Division of Parks and Recreation's interpretive operations coordinator. This chapter is intended to be a guide for planning and implementing interpretive and environmental education services at Itasca State Park. A comprehensive research and monitoring effort will be necessary to (a) evaluate progress toward implementation of these recommendations; (b) continuously improve program delivery; and (c) better understand the park's natural, cultural and historical resources. Periodic revisions of position descriptions and individual work plans for park staff will be necessary as the recommendations and actions are implemented and monitoring efforts continue.

Chapter 8. Resort Operations

Introduction

Itasca State Park's Douglas Lodge Resort is an important component of the recreational opportunities offered at the park. The resort is also an important feature used by the local tourism industry to bring visitors to the Itasca region. The Douglas Lodge Resort consists of rental cabins, guest rooms in Douglas Lodge, a small motel, a restaurant, and two gift shops. All of the resort facilities are located within the proposed Concentrated Use Zone (Zone 3), and most of the facilities are located at the southern end of Lake Itasca's eastern arm. Beyond the lodging, restaurant, and gift shop services, the resort operation provides catered food service for special events such as weddings, family reunions, and small conferences.

This chapter summarizes the major facilities and recreational opportunities available through the resort operation. The chapter begins with a section which outlines the resort operation's major management goals. The next section of the chapter identifies the target benefits associated with the resort operation. A section near the end of the chapter lists the major management recommendations and actions relevant to future resort operations. The chapter ends with a section on research and monitoring needs associated with the Douglas Lodge Resort.

Management Goals

The following goals have been identified to guide the Douglas Lodge Resort:

- Provide quality and affordable lodging, food service; and gift shop opportunities for visitors;
- Provide visitors with opportunities to attain the experiences and benefits associated with the Douglas Lodge Resort;
- Manage the resort business such that its net operating costs do not exceed net revenues;
- Continue to provide capital improvement funding as needed to maintain safe, clean, and quality facilities for visitor enjoyment; and
- Provide facilities and opportunities that are consistent with the park's overall responsibility to protect the natural, cultural, and historical environment found within the park.

Although these goals should guide management decisions related to the Douglas Lodge Resort, translation of these goals into specific management actions will be guided by the resource and

recreation management goals established for the park's Concentrated Use Zone, in which the resort is located. In addition, specific management actions will be influenced by the role that Douglas Lodge plays in the region's tourism industry.

Target Benefits

The Douglas Lodge Resort offers a variety of opportunities to attain several of Itasca State Park's target benefits. A more thorough discussion of the park's target benefits is presented in the management zoning chapter than is found in this chapter. However, the park's target benefits that are most relevant to the Douglas Lodge Resort among the visitor, community, economic, and environmental benefit types are presented below.

Visitor benefits: Among the most important target visitor benefits most closely related to the Douglas Lodge Resort are (a) enjoyment of nature and friends, (b) relaxation and new experiences, (c) family bonding, (d) solitude and escape, (e) social recognition and meeting new people, and (f) learning. Other important visitor benefits associated with the Douglas Lodge Resort are getting away from the usual demands of life, enjoying the smells and sounds of nature, and resting mentally.

Community benefits: Those community benefits most closely associated with the Douglas Lodge Resort are (a) providing a place for residents to gain a greater concern for the natural environment, (b) a source of community pride, (c) a place to gain the feeling that the community is a special place to live, and (d) a place to attract tourism to the area.

Economic benefits: The Douglas Lodge resort offers considerable opportunity to attain many of the park's target economic benefits. Among these are (a) local and regional economic growth, (b) employment opportunities for local citizens, (c) contributions to net national economic development, and (d) contributions to the international balance of trade through tourism.

Environmental benefits: The principal environmental benefits associated with the Douglas Lodge Resort are(a) an increased understanding of human dependency on the environment, (b) environmental stewardship and preservation, and (c) a place to enhance environmental ethics.

Summary of Existing Services

The Douglas Lodge Resort has been in existence in the park in some form since the Douglas Lodge building was constructed in 1905. This makes the resort operation one of the oldest forms of

recreation available to Itasca State Park visitors. The original lodge was the first building constructed in the park for visitor use. This facility provided guest rooms and a restaurant. The resort operation has expanded in size from the original single building. Between 1905 and the end of the 1930s, several major construction projects were completed that increased the size of the lodge operation. Some rental cabins were constructed during the early 1900s and the Clubhouse which provides guest rooms was completed in 1914. The original Forest Inn was constructed in 1919. Nicollet Court, an 18 room motel, was build in the 1920s and has been remodeled several times since its original construction. Two additions to the original lodge building and several employees' cabins were also constructed during this period. The Civilian Conservation Corps (CCC) replaced the original Forest Inn with the present building and constructed additional rental cabins in the late 1930s. Brower Inn was constructed in 1958 on the shores of Lake Itasca. This building now serves as a snack bar and banquet facility. Additional rental cabins were also constructed in the late 1960s. Most of the buildings within the Douglas Lodge Resort are listed as contributing elements on the National Register of Historic Places (See Chapter 5 - Cultural Resource Management).

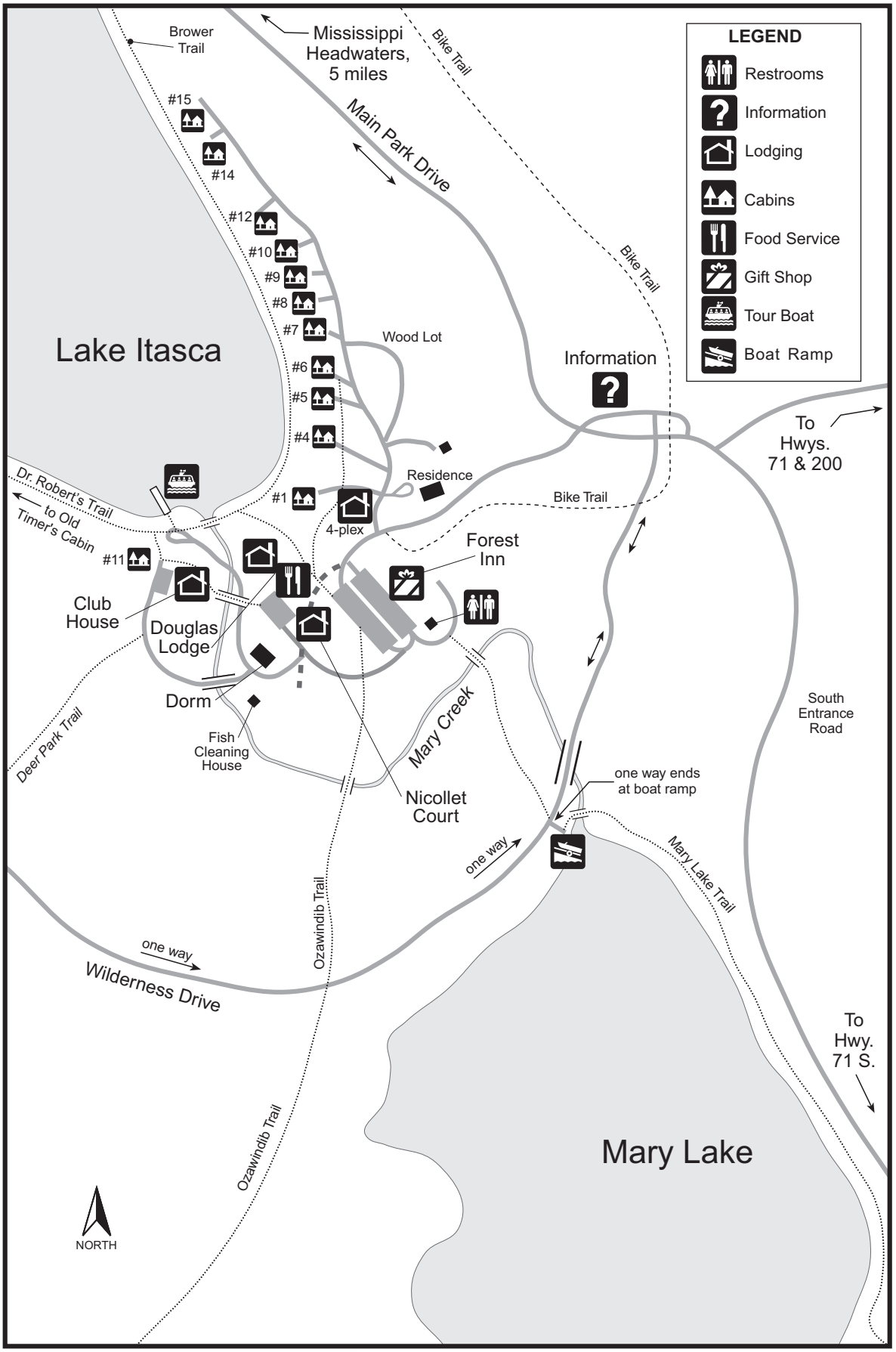
Today, the Douglas Lodge Resort consists of Douglas Lodge, Nicollet Court, the Clubhouse, 19 rental cabins, Brower Inn, and two gift shops. One gift shop is located in Forest Inn and one gift shop is located near the Headwaters of the Mississippi River. Most of the lodge facilities are located on the southern end of Lake Itasca's eastern arm (Figure 18). Collectively, most of the facilities in the vicinity of the main lodge building resemble a rustic resort from the early 1900s to the late 1930s period and form the Douglas Lodge Historic Area described in Chapter 5 (Cultural Resource Management).

Several different methods have been used to manage the Douglas Lodge Resort over time. From 1904 to 1914, the Itasca State Park superintendents managed the lodge. During this period of time, the park superintendents were allowed to retain profits from the facility for their use. From 1914 to 1943, the lodge was leased to private parties. During this period of time, concessionaires paid the state a nominal fee for use of the facilities. The Division of Parks and Recreation has managed the lodge directly under the supervision of the Itasca State Park Manager since 1943. Currently, a full-time lodge manager and a part-time gift shop buyer are employed by the Division of Parks and Recreation to provide day-to-day management of the Douglas Lodge Operation. Additional seasonal employees are hired during the lodge's May to October operating season.

In 1993, legislation was passed to convert the Douglas Lodge Resort's operating budget from a state general fund subsidized budget to a self-sufficient budget. Under the current funding approach, all Douglas Lodge Resort receipts are deposited into a dedicated account and operational costs (salaries, supplies, and expenses) are absorbed by the same fund. Funding for capital improvements and major infrastructure maintenance continues to be provided from other funding sources (i.e., capital bonding, special appropriations, etc.).

Three types of visitor services are currently provided as part of the Douglas Lodge Resort (lodging, food service, and gift shops). Meeting rooms are also available in the Douglas Lodge building to accommodate small conferences and banquet catering is available for larger groups. The Douglas Resort serves approximately 13,000 overnight and restaurant guests, employes one full-time and

Figure 18. Itasca State Park Existing Douglas Lodge Historic Area Facilities



over 60 seasonal people, and generates approximately $1.5 million in gross receipts annually. A brief discussion of the lodging, food and gift shop services follows.

Lodging

Lodging opportunities have existed in the Douglas Lodge Resort since 1905. Currently, the resort offers 19 rental cabins, 18 motel rooms in Nicollet Court, 10 guest rooms in the Clubhouse, and 10 rooms in Douglas Lodge with a total capacity of 160 guests per night. Lodging facilities are currently available from Memorial Day weekend through early October of each year. Visitors come to the resort to enjoy a night, a weekend, or even several days in Minnesota's northwoods. They might be seen sitting on one of the porches at night enjoy the sight and sounds of Lake Itasca, walking the short trail between a cabin and Forest Inn or the lakeshore, or simply sitting in a cabin and enjoying quiet time with family and friends. Many of the resort's visitors return year after year.

Cost per night for lodging varies depending upon the type of room or cabin. Overall, the lodge operated at approximately 71 percent of capacity during the 1997 season. Within this overall occupancy rate, the lodge operates at or near capacity on weekends. In addition, the lodging services portion of the resort operation has continued to generate a net positive cash flow since the 1993 change in funding formulas.

Renovation work has recently been completed on the Clubhouse, Douglas Lodge building and several of the rental cabins to improve accessibility and restore the buildings so that they more closely resemble their rustic style architecture. Additional rehabilitation work has been scheduled for several of the remaining buildings. One of the most urgent rehabilitation needs is for replacement of Nicollet Court which is rapidly deteriorating .

Food Service

The Douglas Lodge Resort offers food service at a 172 seat restaurant in the Douglas Lodge building and a snack bar at Brower Inn. The restaurant operates at near capacity on the weekends and during many days of the peak season. The Douglas Lodge restaurant serves breakfast, lunch, and dinner to visitors from early June through the end of September each year. The Brower Inn snack bar is located near the park's swimming beach and picnic area and provides grill and soda fountain service during the summer season.

Brower Inn and Forest Inn are also available for catered banquets such as family reunions, weddings, and private organizations. Reservations are required for catered banquets and can be made through the lodge manager. Approximately 40 banquets serving over 3,000 people were catered through the lodge during the 1998 season.

Despite shortened seasons, scheduling adjustments, and other cost containment measures taken since the 1993 legislation was passed, the food service portion of the Douglas Lodge Resort operation continues to generate substantial net losses.

Gift Shops

The Douglas Lodge Resort includes two gift shops. The Forest Inn Gift Shop provides a range of gift and souvenir items that includes clothing, books, and jewelry with a Minnesota northwoods and Itasca State Park theme. An attempt is made to purchase products from local artisans, authors, and manufacturers wherever possible. The Headwaters Gift Shop is located at the northern end of Lake Itasca near the Headwaters of the Mississippi River. This gift shop carries a much smaller product line than the Forest Inn Gift Shop largely because of space limitations. Collectively, the gift shops have consistently demonstrated a strong net profit since the 1993 legislation was passed.

Recommendations and Actions

Itasca's Douglas Lodge Resort should focus on providing opportunities for attainment of the management goals and target benefits identified earlier in this chapter and realization of the vision and mission statements in Chapter 1. Management actions taken for the resort should adhere to the management zoning concepts presented in Chapter 3, the management goals for the Concentrated Use Zone (Zone 3) identified in Chapters 4 - 7. In addition, design of specific facilities to implement these recommendations should adhere to the building and facility management recommendations presented in Chapter 9.

Although current Douglas Lodge management activities generally reflect the goals outlined earlier in this chapter and the management zone description for the Concentrated Use Zone (Zone 3) found in Chapter 3, some improvements are recommended. Some of the improvements may require increased operations and maintenance or development funding. Some of these recommendations involve facility modifications which should be conducted in accordance with the guidelines outlined in the Building and Facility Management chapter (Chapter 9) of this plan. Continued cooperation with the park's resource management, recreation management, and interpretive programs will be essential for successful implementation of recommendations for the Douglas Lodge Resort.

The recommendations and management actions that follow are intended to provide a general direction for management of the Douglas Lodge Resort. Annual work planning meetings will use these recommendations to determine short-term goals, priorities, and actions. Many of the management actions listed below are, therefore broad and will become more specific through the work planning process.

<u>Recommendation</u>: Continue existing efforts to maintain, rehabilitate, or restore the Douglas Lodge Resort's historically significant buildings.

<u>Discussion</u>: Many of the buildings found within the Douglas Lodge Resort are contributing elements to the park's status on the National Register of Historic Places (Table 15). As such, maintenance, rehabilitation, or restoration of these buildings is a critical responsibility associated with managing the resort operation. In addition, visitors come to the resort in search of the opportunities for getting away from the usual demands of life, find solitude, and enjoy nature. At the same time, it is important to recognize that the resort facilities must comply with building and health codes which have changed over time. The Division of Parks and Recreation has invested funds in rehabilitation and restoration of many of the lodge's historic buildings in recent years. Additional rehabilitation or restoration is needed on several of the buildings within the Douglas Lodge Resort. Among those buildings needing such work are a staff dormitory located near the Douglas Lodge building and some of the cabin buildings.

Actions to Implement Recommendation:

A. Develop a long-range maintenance, rehabilitation, and restoration schedule for the Douglas Lodge Resort buildings;

B. Maintain the resort facilities as a rustic style resort reflective of the 1900 - 1940s period;

C. Work with the MHS to ensure that the historical integrity of the resort's historic structures is maintained over time;

D. Continue to offer rental cabins and guest rooms in the Clubhouse and Douglas Lodge building to park visitors; and

E. Continue to view the resort buildings in the immediate vicinity of the Douglas Lodge Building as one landscape with a strong cultural component. Management actions taken to maintain the resort's historical integrity should consider the relationship between proposed actions and the overall landscape.

<u>Recommendation</u>: Replace inadequate or inappropriate buildings and facilities with buildings and facilities that are consistent with the resort's historic character.

<u>Discussion</u>: Although most of the buildings and facilities that make up the Douglas Lodge Resort are consistent with the historical integrity of the resort, some of the existing buildings and facilities

are not reflective of the resort's historic character. Additionally, some buildings and facilities within the resort are currently inadequate for their current uses. Among these are Nicollet Court, Brower Inn, the Headwaters Gift Shop, the Dormitory building, the Staff Residence, and the Douglas Lodge parking lot area. Efforts should be made to replace these buildings and facilities with more suitable structures that are consistent with the resort's historic character.

Actions to Implement Recommendation:

A. Replace Nicollet Court with overnight lodging that can accommodate a comparable number of overnight guests. Consider locating replacement facilities further away from the Douglas Lodge Building to protect the viewshed and historical integrity of the lodge building;

B. Remove Brower Inn and consider constructing an amphitheater on the site consistent with the recommendations found in the Interpretive and Environmental Education Services chapter (Chapter 7). This building was constructed in the 1960s and is architecturally inconsistent with other buildings found within the park. It is also identified as a non-contributing element in the park's National Register of Historic Places designation. Consideration should be given to loss of Brower Inn's snack bar and banquet facilities as plans are developed for removal of the existing structure. Accommodations for these facilities may need to be made at other locations within the park;

C. Replace the Headwaters Gift Shop with a facility that is more suitable as a gift shop. Consider constructing a new Headwaters Gift Shop further away from the Mississippi River shoreline and the Headwaters archaeological site. Design and construction of a new Headwaters Gift Shop should be driven primarily by the desire to improve customer service, improve display areas, and protect important natural and cultural resources surrounding the Headwaters rather than by a desire to increase gift shop profits;

D, Develop a comprehensive landscaping, parking, and visitor flow plan for the Douglas Lodge Historic Area. This plan should include appropriate signage and walkways. Consider redesigning the Douglas Lodge/ Forest Inn parking lot such that the current focus on the automobile is reduced and the focus on pedestrian traffic found in this area during the resort's earlier years is reemphasized. The visitor flow plan should be completed in conjunction with the visitor center plan recommended in Chapter 7 and the transportation plan recommended in Chapter 9;

E. Remove the staff residence found near the entrance to the Douglas Lodge Historic Area. This building was constructed in 1975 and is architecturally inconsistent with the historical character of the Douglas Lodge Historic Area. This building is also identified as a non-contributing element in the park's National Register of Historic Places designation;

F. Replace the 1950s - 1960s era rental cabins found within the resort with cabins that are architecturally more consistent with the resort's historic character. These buildings are non-contributing buildings to the National Register of Historic Places designation; and

G. Restore the dormitory building and continue using it for overnight accommodations.

Recommendation: Develop a long-range plan to ensure the economic sustainability of the Douglas Lodge Resort.

Discussion: Since July 1, 1993, the Douglas Lodge Resort has operated in accordance with a statutory requirement to finance the resort's operating costs from its own revenues. This legislation was intended to make the Douglas Lodge Resort self-sufficient with regard to operating costs. Capital improvements and long-term facility maintenance costs continue to be financed through other funding sources (i.e., capital bonding or other legislative appropriations). The resort has shown a net profit since the 1994 operating season because net profits attributable to the gift shop and lodging portions of the operation have been sufficient to off-set net losses attributable to the food service portion of the operation. However, long-term profit and loss projections indicate that growing net losses from the food service will eventually exceed the net profits from the gift shop and lodging components of the operation and create an operating deficit. Actions need to be taken to address this pending deficit situation and ensure the resort's long-term economic sustainability.

Actions to Implement Recommendation:

A. Conduct a study to analyze potential management alternatives that include cost containment measures for the Douglas Lodge Resort and develop recommendations for future management of the resort. This study should identify and examine relevant operating options in its final report. Wherever possible, the appropriate collective bargaining organizations should be involved in this study;

B. Develop a long-range business plan for sustainable operation of the resort based on the proposed study. The business plan should include recommendations for periodic review and updates; and

C. Implement the recommendations that might be developed in the proposed study and business plan.

<u>Recommendation</u>: Continue to provide opportunities for quality experiences and benefits at the Douglas Lodge Resort.

<u>Discussion</u>: Since 1905, the Douglas Lodge Resort has provided Itasca State Park visitors with opportunities to enjoy a range of experiences. Among these are solitude and escape, relaxation, enjoying nature, and getting away from the usual demands of life. At the same time, visitors have ready access to the park's other recreational opportunities and natural features. Many visitors also take advantage of the many recreational opportunities available outside of the park in the Itasca region. Management actions taken for the Douglas Lodge Resort should be sensitive to preservation of these experience opportunities.

Actions to Implement Recommendation:

A. Periodically assess visitor experiences and benefits associated with the Douglas Lodge Resort and adjust management actions accordingly;

B. Develop management objectives for the resort that are based on the experiences and benefits associated with Douglas Lodge;

C. Work with the park's resource, recreation, and interpretive services programs to orient visitors to the range of opportunities available at Itasca State Park and to ensure that the management actions taken in the Douglas Lodge Resort are consistent with the goals of the park's other management programs;

D. Work with local tourism providers to offer opportunities that complement those available in the region. Marketing efforts for the lodge should be coordinated with those of other regional tourism providers wherever possible;

E. Continue to participate in trade shows and other activities designed to enhance public awareness of the services available through the Douglas Lodge Resort, Itasca State Park, and the region;

F. Continue to offer high quality yet reasonably priced merchandise that represents Itasca State Park and its surrounding region through the park's gift shops;

G. Continue to provide conference and banquet opportunities to groups through Douglas Lodge;

H. Continue to offer seasonal lodging, food service, and gift shops for visitor enjoyment. A variety of lodging opportunities should be maintained in the resort to accommodate individual guests, families, and larger groups. The gift shop at Forest Inn should be maintained. And, food service should be made available to resort guests and other park visitors; and

I. Consider increased reliance on self-service options for delivering food service to visitors.

Research and Monitoring

Periodic research and monitoring of the Douglas Lodge Resort's management efforts is important to measuring the quality of visitor experiences, impacts on natural resources, profits/ losses, and the general effectiveness of management efforts to respect the park's management goals and realize the park's target benefits. Evaluation of the profits and losses, marketing research, and customer satisfaction research are critical components of providing an effective and sustainable resort operation. Although some research exists on visitor behavior and some anecdotal research exists on customer satisfaction, no systematic approach to conducting economic, market, or other social science research related to the resort has been adopted. Baseline research on the benefits that visitors and communities attain from the park and lodge has been conducted. Follow-up experience and benefits research should be conducted on a regular basis to evaluate progress toward meeting visitor and community expectations or to identify changes in expectations.

Equally important to the long-term effectiveness of the Douglas Lodge Resort is marketing and economic analysis research. Where the lodge's customers originate, how long they stay, what products they are seeking, what products they purchase, how much money they spend in local communities, and where they spend money in local communities are among the types of marketing research questions that should be asked on a regular basis. Similarly, understanding economic trends regionally, statewide, and nationally are important to determining customer spending patterns, selecting products for sale in the gift shops, pricing restaurant menus, and establishing lodging rates.

Clear, specific, quantifiable, and measurable management objectives should be developed for the Douglas Lodge resort to aid in monitoring and evaluating the quality of visitor experiences and benefits and the effectiveness of management activities. Standards and indicators for quality experiences should be developed to provide specific measures for monitoring and evaluation. Similar objectives, standards, and indicators should be established for measuring the resort's effectiveness at realizing its target benefits. Appropriate modifications in management techniques and direction should be made based on research results.

Chapter 9. Buildings and Facility Management

Introduction

Several of the recommendations found in this management plan involve modifications to existing buildings and facilities or construction of new buildings and facilities. In addition, a system of utilities (water, sewer, telephone, etc.) comparable to that of a small city exists within the park. The park also contains a research and teaching unit of the University of Minnesota (The Itasca Field Station) that consists of several administrative buildings, classrooms, cabins and dining facilities on the east shore of Lake Itasca. This chapter (a) presents the major goals of the park's buildings and facilities management efforts, (b) identifies the buildings and facilities management guidelines underlying the recommendations found elsewhere in this plan, (c) presents buildings and facilities recommendations not found in other chapters, and (d) highlights some of the major recommendations found in other chapters.

Management Goals

The effort to provide buildings and facilities management at Itasca State Park has four major goals. These are to:

- Provide buildings and facilities for the safe use and enjoyment of the park;
- Maintain park infrastructure that protects the public investment in the park;
- Provide buildings and facilities that are compatible with the park's natural and cultural environment; and
- Provide buildings and facilities (including roads and trails) that aid in experience and benefit attainment at the park.

ADA Requirements

The Department of Natural Resources follows the Americans with Disabilities Act of 1992 to make public facilities accessible. All MNDNR development follows the buildings and facilities guidelines presented by the US Architectural and Transportation Barriers Compliance Board and the US Department of Transportation (1994). In addition, recreational development accomplished by MNDNR follows the recommendations and guidelines presented by the US Architectural and

Transportation Barriers Compliance Board (1994) to address those outdoor facilities that are not adequately covered in the general building and facilities guidelines. Although the recreational guidelines have not been approved, MNDNR follows them as though they have been approved. As changes or revisions are made in the federal guidelines, they will be incorporated into MNDNR's development projects.

Proposed Management Guidelines

Itasca State Park contains over 100 structures and several miles of roads and trails. These structures include rental cabins, picnic shelters, interpretive facilities, campground buildings, offices, staff residences, and shop buildings. These buildings are connected by a series of roads and trails and served by a series of utility lines. Many of the buildings and facilities (including roads, trails and parking lots) are listed as contributing elements to the park's status on the National Register of Historic Places. Management of these buildings and facilities can be complicated and involves extensive investment of time and money. The recommendations found throughout this plan address specific buildings and facilities. It is important that building and facilities management activities taken to implement the specific recommendations consider how each of the park's buildings and facilities fit into the park's general themes. Maintenance of existing facilities should also reflect these general themes. In addition, buildings within in the University of Minnesota Field Station should adhere to these themes as well.

Accordingly, a set of building and facility management guidelines are proposed to ensure that specific actions are integrated into the park's overall building and facility management direction, historical integrity, natural and recreation resources, interpretive services, and commitment to management for beneficial experiences. The following guidelines should be followed for all building and facility construction and maintenance conducted in the park:

- Maintain the historical character of the park's buildings while merging building design with modern uses but attempt to maintain original use (e.g., adaptive reuse for historical buildings);

- Adhere to the management zoning concepts and guidelines identified in this management plan;

- Adhere the park's resource and recreation management goals in the design, construction, and maintenance of buildings and facilities;

- Use modern construction technologies in buildings, signs and support facilities that maintain historical character of existing buildings and sites;

- Ensure visitor safety in building design and construction;

- Use construction and design techniques that follow existing building and health codes;
- Use either stone and log, frame with half-log siding, or CCC era style for any new construction in public use areas;
- Maintain continuity of style, design, and functionality of existing buildings and facilities in new construction or rehabilitation within site context;
- Restore and maintain existing historic buildings to their original condition as much as possible;
- Develop and implement an ongoing maintenance program to maintain buildings following their rehabilitation or restoration;
- Involve the MHS, Fire Marshal, Health Department, the Disabilities Council, and other relevant governmental agencies at the beginning of building design and construction;
- Use controlled or restricted development within the park's historical areas;
- Use maintenance activities on buildings within public use areas that respect their site context; and
- Exempt construction and maintenance of buildings in non-public use areas from these criteria when adherence to the criteria interferes with functionality of such buildings and facilities.

Summary of Major Buildings and Facilities Recommendations

The following summary highlights the major buildings and facilities recommendations found in other chapters of this management plan. This is not intended to be an exhaustive list. Specific building and facilities management projects will undoubtedly emerge over time and will require consideration on a case-by-case basis. Cost estimates are not included below because they will vary over time. Many of the major recommendations relate to Lake Itasca's east shoreline or to the Douglas Lodge Historic Area. Figure 19 displays some of the major recommendations affecting Lake Itasca's east shoreline and Figure 20 displays some of the major recommendations affecting the Douglas Lodge Historic Area. It should be noted that additional buildings and facility modifications

Figure 19. Itasca State Park Recommended Facility Modifications (Lake Itasca East Shoreline)

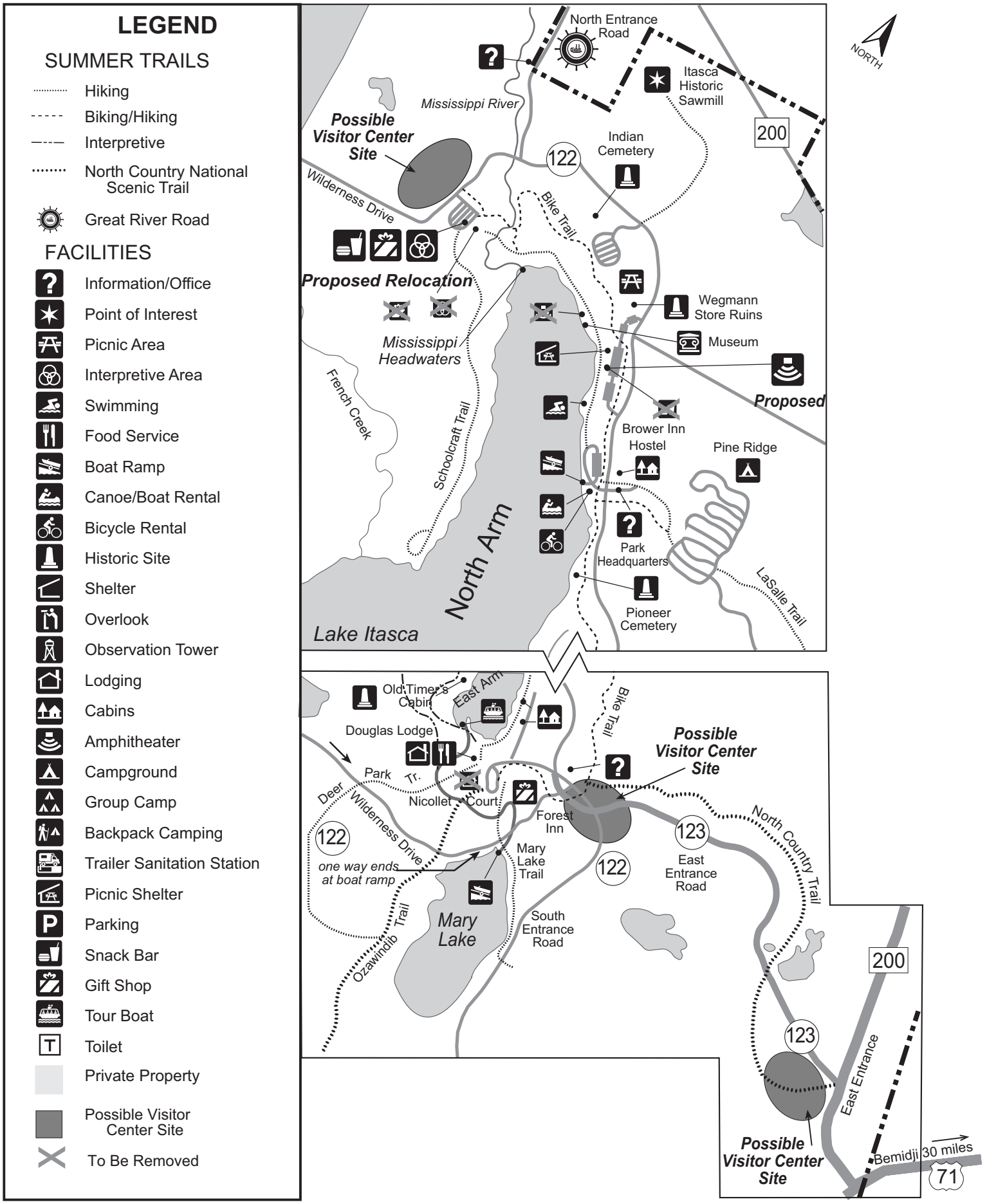
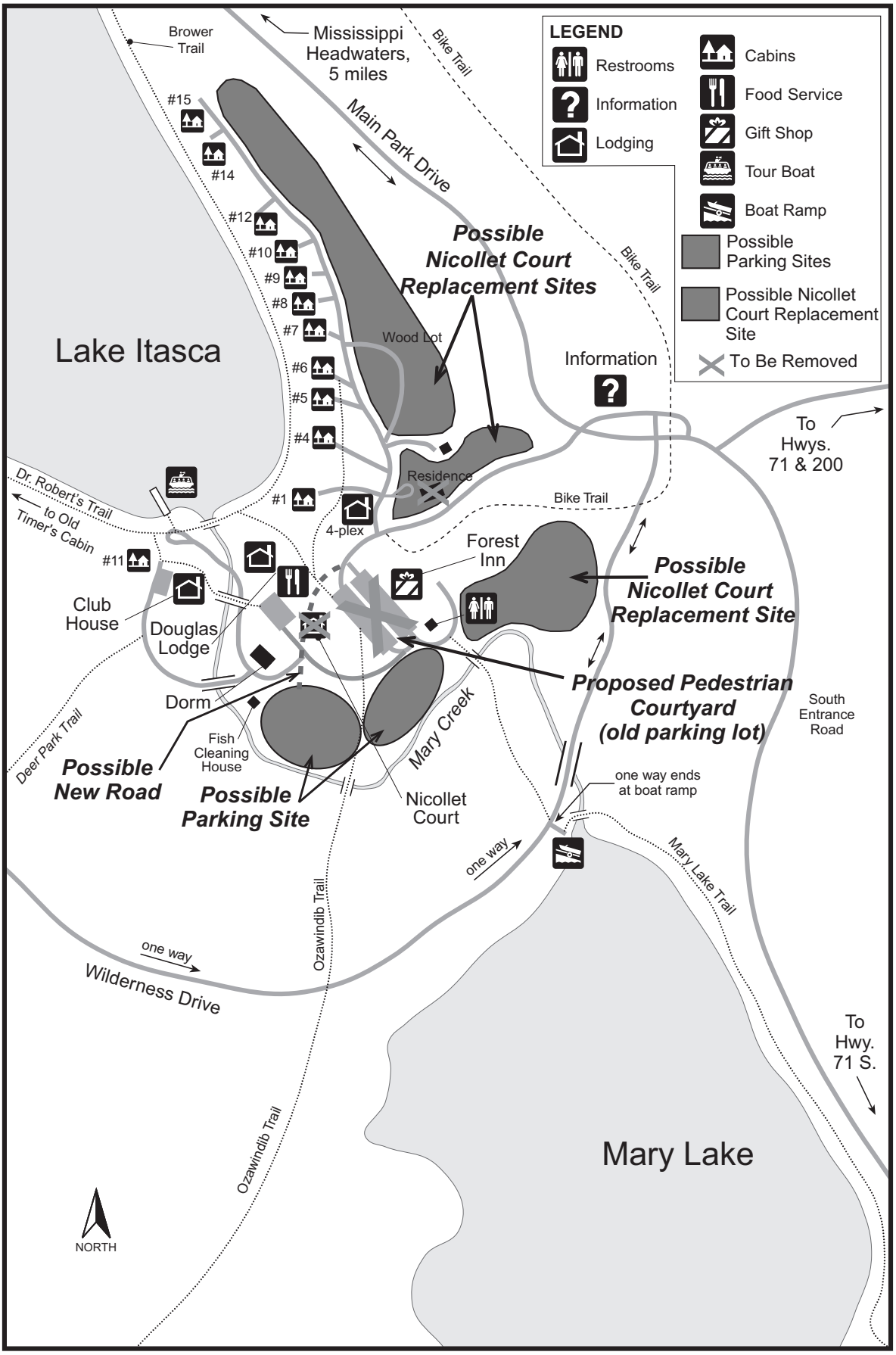


Figure 20. Itasca State Park Recommended Facility Modifications (Douglas Lodge Historic Area)



are recommended throughout this plan for other portions of the park that are not displayed on Figures 19 and 20. More detailed discussion of the individual buildings and facility recommendations can be found in the relevant chapter(s) of this plan.

Among the buildings and facilities modifications recommended in this management plan are:

- Design and construct an Itasca State Park Visitor Center;
- Remove Brower Inn and consider reuse of the site for an outdoor amphitheater;
- Consider development of additional short trail links in the Backcountry or Concentrated Use areas for interpretive programming;
- Redesign the Landmark Trail and Blowdown Trail parking lot and display area;
- Redesign and relocate the interpretive and gift shop facilities at the Headwaters of the Mississippi;
- Continue efforts to rehabilitate and restore historic buildings throughout the park, but in particular in the Douglas Lodge and Bear Paw Campground Historic Areas;
- Consider redesign of the Douglas Lodge/ Forest Inn parking lot with a pedestrian focus;
- Remove Nicollet Court and replace it with overnight accommodations to serve a comparable number of guests;
- Design an additional backpack camping loop in the Backcountry Zone (Zone 2); and
- Construct new park administrative offices. Consider relocated the park's administrative office within close proximity to the new Itasca Visitor Center.

Infrastructure Recommendations and Actions

In addition to the building and facility recommendations found elsewhere in this management plan, recommendations for infrastructure improvements to support the park's management activities follow. Infrastructure improvements should be consistent with the building and facility management guidelines described earlier in this chapter, the park's management zone guidelines presented in Chapter 3, and the resource, recreation and interpretive management goals presented in Chapters 4 - 7. Because the quality of the experiences and benefits associated with the park are influenced by the park's basic infrastructure, it is necessary that infrastructure improvements protect the park's natural

and cultural resources. In addition, design of specific facilities to implement the following recommendations should be tailored to the management zone where they will occur according to the management guidelines for each zone presented in Chapter 3.

The recommendations and actions that follow are intended to provide a general direction for infrastructure management activities in the park. Annual work planning meetings will use these recommendations to determine short-term goals, priorities, and actions. Many of the management actions listed below are, therefore broad and will become more specific through the work planning process. It is also recognized that the following improvements will necessarily occur over time as money and staff time become available to implement the recommendations.

Recommendation: Continue to maintain the park's road system.

Discussion: Itasca State Park contains several miles of roads that are a collection of park owned and maintained, county owned and maintained, and township owned and maintained roads. Three official visitor entrances exist for the park. Known as the South, East, and North entrances, these three entrances each serve about one-third of the park's annual visitors. A service road from Highway 200 also provides access to the park for staff, deliveries, and other service vehicles. This service access reduces the amount of service related traffic on the park's main road system. The road system also includes (a) Main Park Drive from the southern end of Lake Itasca to Wilderness Drive; (b) Wilderness Drive (a scenic drive to the west of Lake Itasca); and (c) access roads to the campgrounds, group camps and Douglas Lodge Historic Area. This road system is the major transportation route for most of the park's visitors. In recent years, erosion, increased vehicular traffic, and age have created some weaknesses in the system that should be addressed.

Actions to Implement Recommendation:

A. Develop a regular repair and maintenance schedule for the park's roads;

B. Maintain the three visitor entrances and service entrance road that currently exist;

C. Design and construct turnout lanes along Main Park Drive to accommodate visitors who wish to stop along the drive, bus traffic, and larger recreational vehicles in areas suitable for such construction without causing major disturbances;

D. Rebuild Main Park Drive from the east entrance to the Headwaters to include turn lanes, erosion control devices, storm gutters, etc. Consider relocating portions of the road away from steep slopes where possible;

E. Resurface and maintain the campground roads;

F. Remove the culvert that exists on the Mississippi River crossing south of the north contact station and replace it with a bridge similar to what was there prior to installation of the culvert;

G. Redesign the Peace Pipe Vista and Preacher's Grove parking lots to allow for bus turn arounds and to move the parking lot away from the edge of the ridge;

H. Redesign parking lots at Wegmann's Cabins and the Pioneer Cemetery sites; and

I. Utilize road designs that are sensitive to soil conservation, erosion control and protection of water quality.

Recommendation: Repair and maintain Wilderness Drive as a scenic route through the park.

Discussion: Wilderness Drive serves as a scenic drive beginning at the Landmark Trail area and ending on the southern end of Lake Itasca, near the Mary Lake boat access. This one way drive winds through some of the park's old-growth pine forests and offers visitors opportunities to access several shorter interpretive trails adjacent to parking lots along Wilderness Drive. Wilderness Drive is also designated as a portion of the park's bicycle trail system. The road was originally paved in the mid-1980s and is in need to resurfacing and repair. In addition, parking lots at some locations are inadequate to serve visitor needs and the inadequately designed Landmark Trail parking lot area does not attract visitors to the Wilderness Drive orientation displays as well as originally intended.

Actions to Implement Recommendation:

A. Repave Wilderness Drive and return it to the width that it was when it was first paved;

B. Make Wilderness Drive a two-way road to the Landmark Trail parking lot to allow a turn around area;

C. Redesign the Landmark Trail parking lot so that it is more compatible with visitor flow, allows for a turn around option, and serves as a basic orientation site for Wilderness Drive. Install pit toilets and new information kiosks;

D. Provide adequate parking and pit toilets at trail heads along Wilderness Drive;

E. Continue to improve the non-personal interpretive materials found along Wilderness Drive; and

F. Monitor vehicular traffic along Wilderness Drive and consider movement toward eventual restrictions on vehicular traffic as discussed in Chapter 7 (Interpretive and Environmental Education Services). Such restrictions are not considered appropriate at this time, however the option should be available for consideration if crowding or resource damage should become a problem.

<u>Recommendation</u>: Develop a visitor management and traffic flow plan.

<u>Discussion</u>: Although Itasca State Park contains several miles of roadways and trails spread over 32,000 acres, most of the park's visitors spend most of their time in the Concentrated Use Zone (Zone 3) which is located primarily along the eastern shore of Lake Itasca. This concentration of visitors in a relatively small area of the park creates periods of congestion and crowding in some locations. A need exists to examine how visitors move through the park, where they spend their time, and the ability of the current road and trail systems to accommodate the large number of visitors. Because visitor management and traffic flows influence the siting of new facilities, it is important to conduct the proposed study in conjunction with the Visitor Center siting activity recommended in Chapter 7 (Interpretive and Environmental Education Services). In addition, the recommendation contained in this plan to consider redesign of the Douglas Lodge Historic Area parking lots to focus more on pedestrian traffic underscores the need to conduct an analysis of traffic flows.

Actions to Implement Recommendation:

A. Contract with an independent consultant with expertise in transportation planning to conduct the recommended study;

B. Conduct the proposed study in conjunction with the siting of the Visitor Center recommended in Chapter 7; and

C. Implement recommendations developed through the study in the planning and design of park transportation facilities.

<u>Recommendation</u>: Continue to maintain and upgrade the park's utility systems (e.g., sewer, water, electrical, and telephone)

<u>Discussion</u>: Itasca State Park's utility systems are complicated and involved several miles of sewer, water, electrical, and telephone lines comparable to those found in a small city. In addition, the park operates its own sewage lagoon, lift stations, and water pumps. The utility systems require constant maintenance and examination for current code compliance. Periodic upgrades are necessary to address changing infrastructure, codes, and technology.

Actions to Implement Recommendation:

A. Continue routine maintenance activities on the utility systems;

B. Continue to monitor the condition of the utility systems to ensure continued compliance with building and health codes, environmental protection laws and regulations;

C. Continue to monitor visitor and staff needs for utilities and make periodic adjustments in the relevant systems to accommodate changing needs;

D. Ensure that periodic rehabilitation and upgrades are in compliance with relevant codes, consistent with relevant environmental protection laws, and designed with appropriate technology.

<u>Recommendation</u>: Construct new administrative offices for Itasca State Park.

<u>Discussion</u>: The park's administrative offices are currently housed in two buildings separated by a walkway. The manager's office and support staff offices are located in the Park Headquarters, which was constructed during the CCC era and is currently inadequate to accommodate staff and visitor needs. The remaining professional staff are housed in the former manager's residence that has been converted to office space without appropriate remodeling. This building was also constructed during the CCC era. Both buildings are non-compliant with the Americans with Disabilities Act. Collectively, the facilities are also not adequate to accommodate seasonal fluctuations in staff, interns, or volunteers. Nor are they able to provide sufficient work space for year-round staff currently housed within them. The Park Headquarters building also serves as a contact station during the winter months and an information center for park visitors during the higher use seasons. The public space is often crowded and inadequate for current needs.

Actions to Implement Recommendation:

A. Construct a new administrative office building that will allow office consolidation, provide adequate space for permanent staff, and provide space for seasonal fluctuations in staff and provide adequate work space for staff. Consider locating the new administrative offices near the proposed visitor center to improve efficiency of operations;

B. Rehabilitate and remodel the current Park Headquarters building for a more appropriate use; and

C. Rehabilitate and remodel the manager's residence and use it as housing for permanent park staff. Consider using this residence in-lieu of the staff residence that currently exists near the entrance to the Douglas Lodge Historic Area following removal of that facility per the recommendation in Chapter 8.

<u>Recommendation</u>: Continue to maintain the lease agreement with the University of Minnesota governing the Lake Itasca Forestry and Biological Field Station.

<u>Discussion</u>: The Lake Itasca Forestry and Biological Field Station has been operated by the University of Minnesota since 1909. It was a forestry camp until 1934, when the university began offering summer coursework at the station. In 1966, the station became a year-round research facility. Forestry and biological research is conducted year-round by faculty, students, and independent researchers through the field station. The University of Minnesota also makes the facilities available, for a fee, to other educational groups. The station currently consists of over 50 buildings that include staff and student residences, laboratories, a dining hall, and several maintenance and storage buildings. Although the buildings and facilities are owned, maintained, and operated by the University of Minnesota, the MNDNR, Division of Parks and Recreation continues to own the land on which the station is located. A lease agreement exists between the MNDNR and the University of Minnesota for this facility. As the landowner, the MNDNR, Division of Parks and Recreation has authority to approve construction and maintenance projects conducted on the site including building design and landscaping.

Actions to Implement Recommendation:

A. Periodically review the terms and renegotiate the lease agreement for the field station, as necessary;

B. Periodically meet with University of Minnesota staff to discuss the university's long-range goals and objectives for the station and the Division of Parks and Recreation's long-range goals and objectives for Itasca State Park;

C. Continue to review proposed construction, maintenance, and landscaping projects to be conducted by the University of Minnesota to ensure consistency in design and purpose with the overall building guidelines and resource management philosophy established for Itasca State Park. All new buildings constructed on the site should maintain a low profile, be set-back from Lake Itasca's shoreline, and be compatible with the park's general rustic style;

D. Continue to work cooperatively with station staff to conduct research, monitoring, and resource management within the park. Research conducted in the park should continue to require prior approval from park staff and research results should be shared with park staff;

E. Continue to work cooperatively with the Biological Field Station's staff to develop interpretive programming materials for both University students and park visitors; and

F. Continue to cooperate with the University of Minnesota on building and construction projects conducted in the park and at the field station. Major building maintenance and replacement projects conducted at the Biological Field Station should continue to require prior approval from Itasca State Park staff.

Chapter 10. Proposed Boundary Modifications

The existing statutory boundary of Itasca State Park includes approximately 32,000 acres of land and surface water. Within the boundary are 1,000 acres of Permanent School Trust Fund Land, 120 acres of Clearwater County owned land, and 273 acres of privately owned land (Figure 21).

State Park boundaries are established by the Minnesota Legislature. Statutory boundaries serve to identify lands appropriate for inclusion in the park. All boundaries are legally described in Minnesota Statutes. State parks are authorized to negotiate acquisition of land only within the statutory boundary. The state does not have the authority to acquire park land except from willing sellers nor can landowners be required to sell to the state. Inclusion in a park boundary does not limit what private landowners can do with their property.

Proposed Modifications

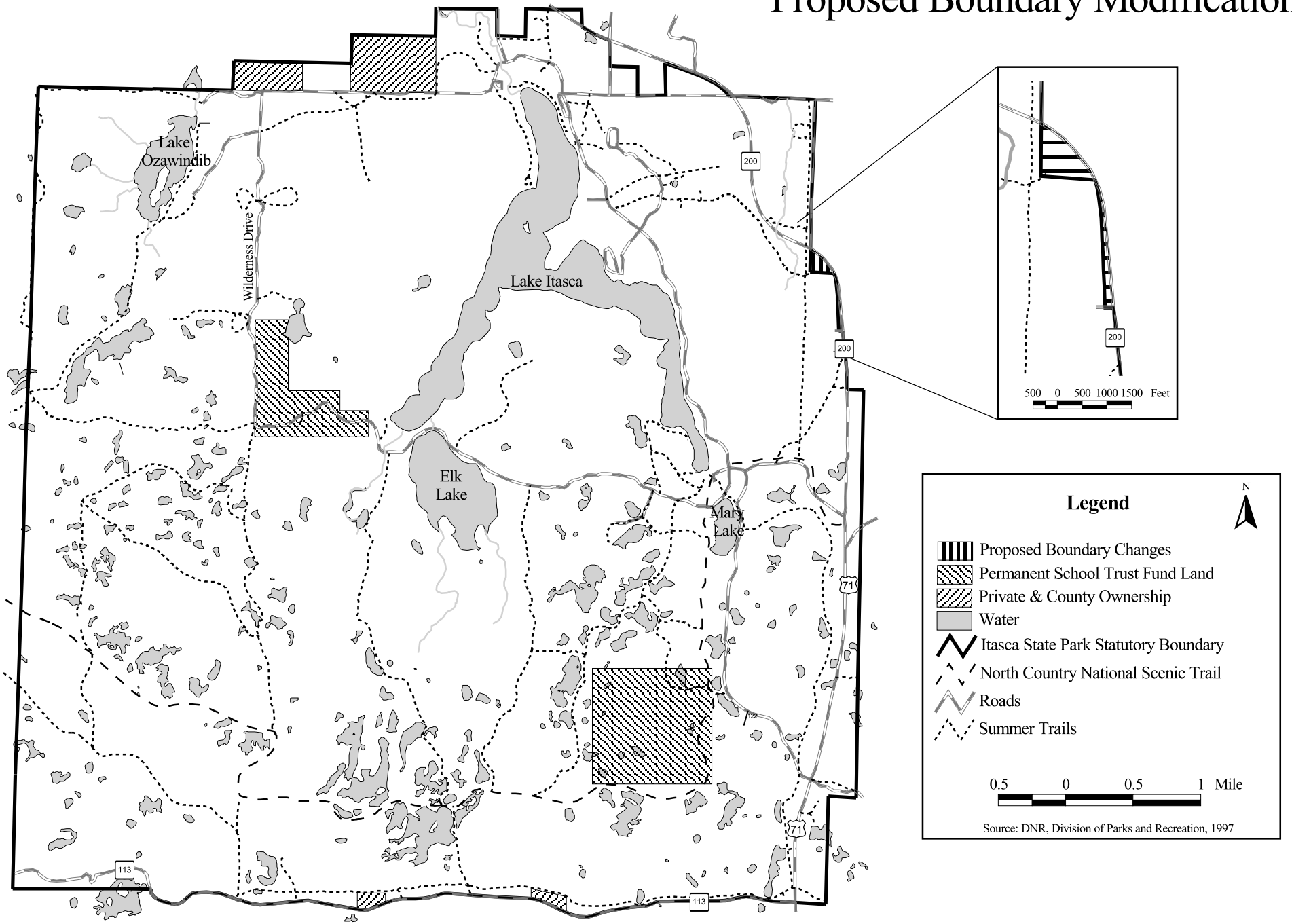
Boundary modifications are considered during all state park management planning processes. Although this plan can recommend changes, only the Minnesota Legislature can change park boundaries. When an addition to a park is considered, the DNR, Division of Parks and Recreation will contact private landowners that would be within a proposed boundary and ask for their documented support. Appropriate local units of government will also be contacted for their support. Without support of the community, the Division of Parks and Recreation will not request boundary changes from the Minnesota Legislature.

Two small boundary adjustments are proposed for Itasca State Park. Both adjustments serve the primary purpose of aligning the existing park boundary with Trunk Highway 200's right-of-way along the eastern boundary of the park (Figure 21). These changes will add to the state's efforts to protect the forest ecosystems found in this portion of the park.

Proposed Land Exchanges

In addition to the proposed boundary modifications, the Division of Parks and Recreation should continue efforts to accomplish a land exchange or purchase to remove the Permanent School Trust Fund designation for those lands within the park boundary that are so designated. This exchange would not remove the land from the park boundary or otherwise alter the existing boundary but would change the land's status and honor the state's fiduciary responsibility to the Permanent School Trust Fund. In addition, the Division of Parks and Recreation should seek to acquire the county owned land within the park boundary either through land exchange or fee title purchase.

Figure 21. Itasca State Park Proposed Boundary Modifications



Chapter 11. Staffing and Operations Costs

Current Staffing

Itasca State Park employes 17 full-time and 85 seasonal people. Staff is allocated to general park administration, resource management, recreation management, resort operations, interpretive services, public safety, and general facility and building maintenance. The regular full-time and seasonal staff is supplemented with Minnesota Conservation Corps summer youth workers, student interns, Federal summer youth program workers, Greenview, Inc. employees, Sentence-to-Service workers, and volunteers when available. The park's current organizational structure is displayed in Figure 22.

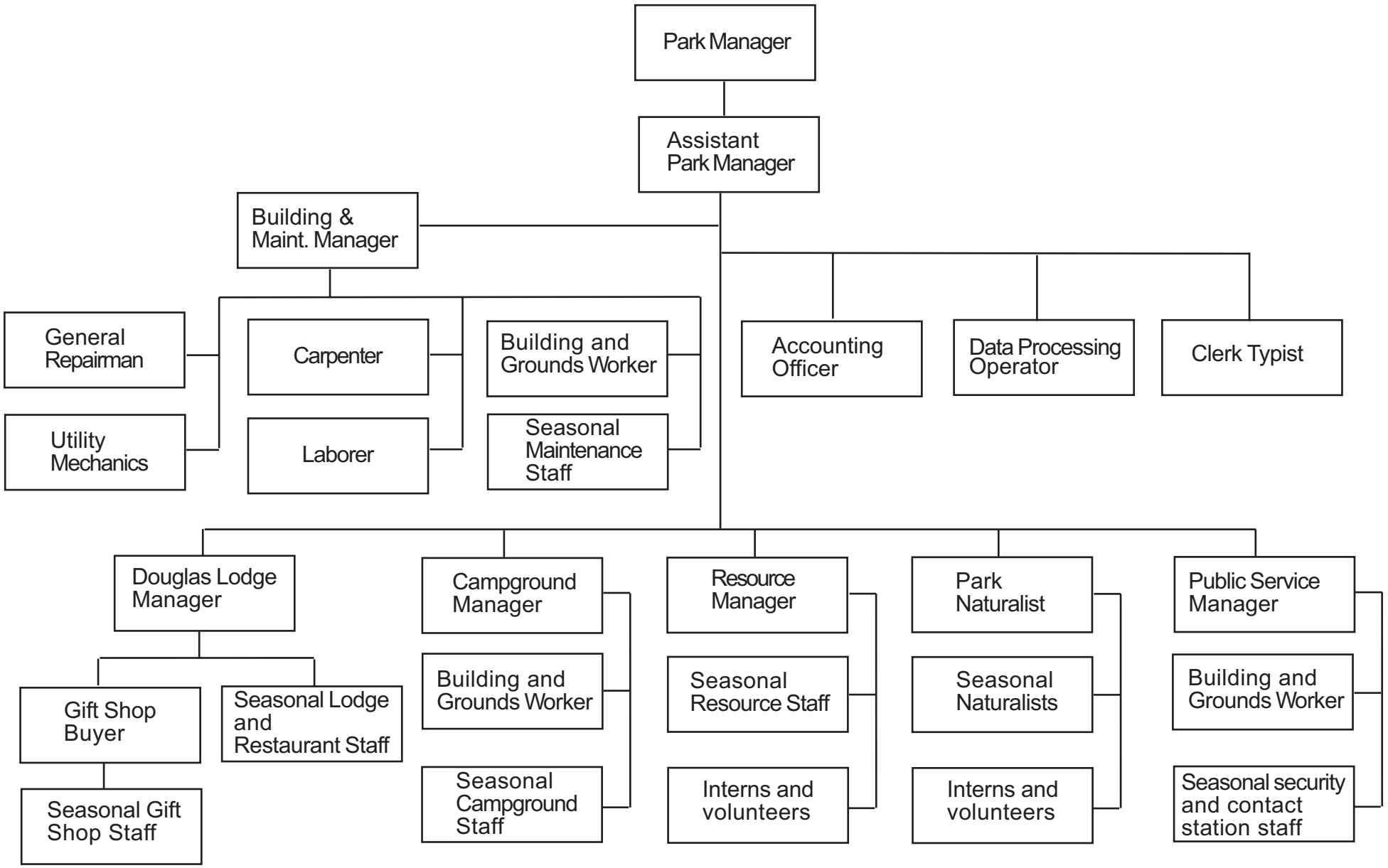
The park manager, assistant park manager, the campground manager, and public service manager are also licensed law enforcement officers within the Itasca State Park boundary. In addition, the park employes two seasonal security staff that meet licensure requirements. They call on other law enforcement agencies, particularly DNR Conservation Officers as necessary to assist with law enforcement within the park. DNR Conservation Officers now primarily help enforce fishing, hunting and trail use laws and rules.

Assistance from other divisions and bureaus within the Department of Natural Resources is also provided to accomplish specific management actions. For example, the Division of Forestry provides technical assistance and staff support for forest management activities; the Division of Fish and Wildlife assists with special hunts, wildlife management, and fish management; and the Bureau of Engineering assists with building and facility modification projects. Minnesota Conservation Corps work crews also provide substantial assistance to the park's trail maintenance and resource management efforts.

Future Staff Needs

The MNDNR, Division of Parks and Recreation estimates that many of the recommendations contained within this plan will result in increased staffing needs for Itasca State Park. Other DNR disciplines may also experience some increased work load in the implementation of certain recommendations and actions. For example, the Division of Enforcement may experience increased work loads as a result of increased or modified recreational opportunities within the park. The level or amount of this increase is difficult to estimate because many of the recommendations are too general to base estimates on at this time. However, the following reflect an initial analysis of major future staffing needs. These needs are above and beyond those currently identified for Itasca State Park under the Division of Parks and Recreation's Minimum Operating Standards and should be implemented as funding for staff expansion becomes available.

Figure 22. Itasca State Park Existing Staff Organizational Chart



Park Administration

Park administrative needs include an additional clerical person to support the interpretive services, resource management, and facility maintenance programs. In addition, increased reliance on computers and growing complexity of computer applications will eventually warrant a network systems person to manage the park's computer network, provide technical assistance to other staff and manage the computer system used for the Douglas Lodge Resort. Construction of a visitor center, increased efforts to administer the Americans with Disabilities Act, increased volunteer efforts, and expanded trail opportunities will generate a need for additional maintenance staff.

Natural and Cultural Resource Management

This plan's Natural Resource Management chapter (Chapter 4) recommends additional staff for the park's resource management program. Expanded natural and cultural resource management efforts and an increased need for basic scientific research justify an additional full-time resource management staff person and 2-3 additional seasonal people for resource management activities. In addition, support for a seasonal Minnesota Conservation Corps crew for the park should continue and the park's growing commitment to use of prescribed burns will generate a need for additional burn crews.

Interpretive and Environmental Education Services

The Interpretive and Environmental Education Services chapter (Chapter 7) recommends that the park's interpretive staff be expanded by two full-time and one part-time person. This additional staff would assist with school groups, coordinate the growing number of park volunteers, and aid in program delivery. In addition, a new visitor center will require additional paid staff and visitor center hosts or docents to supplement permanent full-time staff. The additional staffing needs of the visitor center have not been determined at this time and are dependent in large part on the building's final design and operating schedule.

Operations Needs

Other operational costs such as maintenance supplies and equipment, resource and interpretive supplies and expenses, training, etc. associated with plan implementation are also likely to increase over time. Building and facility modifications recommended throughout the plan are also likely to generate initial start-up expenses and long-term maintenance obligations. As with estimating staff needs, it is difficult to estimate the extent of these needs at this time.

Chapter 12. Plan Amendment

Introduction

State Park Management Plans document a partnership-based planning process and the recommended actions resulting from that process. These comprehensive plans recognize that all aspects of park management are interrelated, and that management recommendations should also be interrelated.

Over time however, conditions change that affect some of the plan recommendations (or, in extreme cases, an entire plan). Plans need to acknowledge changing conditions and be flexible enough to allow for modifications as needed.

For purposes of this plan, less controversial revisions (minor amendments), major amendments, and emergency amendments have been differentiated. Additional considerations are also identified in this chapter for amending the park's management zones. Most future changes in this management plan are likely to be minor amendments. Minor amendments can generally be made within the Division of Parks and Recreation. Major plan amendments will require a more extensive public review process and are likely to be more complicated and comprehensive than minor amendments. Finally, there may be rare occurrences when park staff is required to act quickly to address an emergency situation that would otherwise require a more intensive plan amendment process.

To maintain consistency among the plans and processes, all plan amendments should be coordinated through the Division of Parks and Recreation's Planning Section. Requests for planning assistance should be directed to the Division of Parks and Recreation's Planning Manager at the Central Office.

Minor Plan Amendments

If a proposed amendment generally follows the intent of this management plan (through mission, vision, goals and objectives), the Division of Parks and Recreation has the discretion to modify the plan without a major amendment process unless the proposed amendment meets one or more of the major plan amendment criteria identified below. Examples of cases that are considered minor revisions include the following:

Amendments Related to Physical Development Constraints and Resource Protection

Detailed engineering and design work may not allow the development to be completed exactly as it is outlined in the plan. A relatively minor modification, such as moving a proposed building site to accommodate various physical concerns, is not uncommon. Plans should outline a general direction

and document the general “areas” for development rather than specific locations. For the most part, plans are conceptual, not detail-oriented. Prior to development, proposed development sites are examined for the presence of protected Minnesota Natural Heritage Program elements and historical/ archaeological artifacts. If any are found, the planned project may have to be revised to accommodate the protection of these resources.

Program Chapter Amendments

The Natural Resource Management, Cultural Resource Management, Recreation Resource Management, and Interpretive and Environmental Education Services chapters should be updated periodically as needed. The Division of Parks and Recreation’s staff will determine when an update is needed and coordinate the revision through the Division’s Planning Section. Program chapters should be rewritten in a format consistent with the plan as originally approved by the DNR. To retain consistency, park planning staff should be involved in the plan amendment process.

Major Plan Amendments

If a proposed change meets any of the criteria below, it will be consider a major amendment and must adhere to the major plan amendment process described in this section.

Criteria for Major Plan Amendments

If a proposed change meets any of the following criteria, it must be approved through the management process below. The proposed change:

- Alters the park mission, vision, goals, or specific management objectives outlined in the plan;
- Significantly alters the management zoning described in Chapter 3;
- Is controversial among elected officials and boards, park user groups, the public, other DNR divisions or state agencies; or
- Directly affects other state agencies (e.g., Minnesota Historical Society).

Major Plan Amendment Process

Major plan amendments will involve a public review process that will be structured according to the particular circumstances surrounding the proposed change but will generally include the following steps:

1. Division of Parks and Recreation Initial Step: Review plan amendment at the park and regional level. Determine which segments of the public (including other agencies) potentially have a major concern and how those concerns should be addressed. If the major concerns are within the Division of Parks and Recreation, the issue should be resolved within the division with input from the public. The proposed public involvement strategy should be reviewed with the relevant state park regional manager and the division's central office managers.

2. If the proposed amendment involves other DNR Divisions, the issue should be resolved by staff with input from the public and approved by the DNR's Division Directors. This may require area/ regional integrated resource management team meetings. The Division Directors will determine whether the proposed change should be subjected to the departmental review process (C-TECH/Senior Manager).

3. If the proposed amendment involves other state agencies, agreement on the amendment should be reached by staff with input from the public and approved by the DNR's Division Directors and other appropriate agency managers.

4. Major amendments should not be undertaken without a public forum that is advertised in the local and regional area. Following the forum, the Division of Parks and Recreation Director will determine whether the proposed change should be reviewed by the Department.

5. All plan amendments should be coordinated, documented and distributed by the Division of Parks and Recreation's planning staff.

Emergency Amendments

Emergency amendments shall be limited to those changes required to protect public safety, address natural disasters, or address significant resource management problems. Emergency amendments may be made by state park management staff without organized public input and shall be effective only until the change can be addressed expeditiously through the processes established for either a minor or major plan amendment, whichever is appropriate.

Management Zoning Amendments

Over time, it is expected that alterations to the proposed management zones might become necessary. Resource management goals are likely to evolve, use patterns are likely to change, or the target set of experiences and benefits for Itasca State Park might shift. Any one (or all) of these changes could render some of the zone boundaries and descriptions above obsolete. Should the need

arise, the following procedure will be used to amend the zoning approach recommended in Chapter 3. Proposed amendments are likely to take one of two forms: proposals to make the zoning for some areas of the park less restrictive, and proposals to make the zoning for some areas of the park more restrictive.

Minor Zoning Amendments

Minor zoning modifications shall be limited to those management actions that will have no negative impact on the integrity of the zones described in Chapter 3 nor on the ability to realize the zone's target benefits. Rezoning an area from a more restrictive zone to a less restrictive zone shall only be considered a minor amendment if the area in question is immediately adjacent to the particular less restrictive zone proposed for the area. For example, a proposal to rezone an area from Backcountry to Concentrated Use shall require that the area in question be immediately adjacent to the Concentrated Use Zone to be considered a minor adjustment. The affected area shall also be small in size and contain no endangered, threatened, or protected species. The proposed amendment shall have no negative impact on archaeological or historical resources and shall meet with only minimal public opposition.

A proposal to rezone an area from a less restrictive zone to a more restrictive zone shall be considered a minor amendment unless the area is not immediately adjacent to the more restrictive zone proposed for the area. For example, a proposal to rezone an area from Concentrated Use to Backcountry would require that the area in question be immediately adjacent to the Backcountry Zone to be considered a minor amendment. Proposed amendments shall be considered minor unless there is a significant resource management reason to prohibit the change; the proposed change would significantly alter previously permitted use patterns in the area; or significant public opposition to the change exists.

Minor amendments will only be made by state park management staff as the result of a public process designed specifically to address the proposed amendment.

Major Zoning Amendments

Major zoning amendments shall be all of those that fail to meet the criteria to be considered minor adjustments. A proposed amendment shall also be considered a major amendment if it would:

- Significantly impact the natural resources, the historical or archaeological resources, the visitor use patterns of the area, or the ability to realize the targeted benefits for the zone; or
- Involve large areas of the park;
- Require changes in the park's statutory boundaries;

- Alter the integrity of the zones described in Chapter 3, create a new zone, or eliminate an existing zone; or

- Change an area to a zone designation that is not immediately adjacent to the proposed zone. For example, a proposal to change an area from Concentrated Use to the Scientific and Natural Area Zone when the area in question is not immediately adjacent to the existing Scientific Natural Area Zone shall be considered a major adjustment.

Major adjustments shall require a formal amendment to this plan according to the process described in this chapter. Major adjustments shall require public input and review, interdisciplinary review within the Department of Natural Resources, and approval of the Commissioner of Natural Resources.

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